

MUNICIPAL JOURNAL

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VOLUME XLV
No. 3

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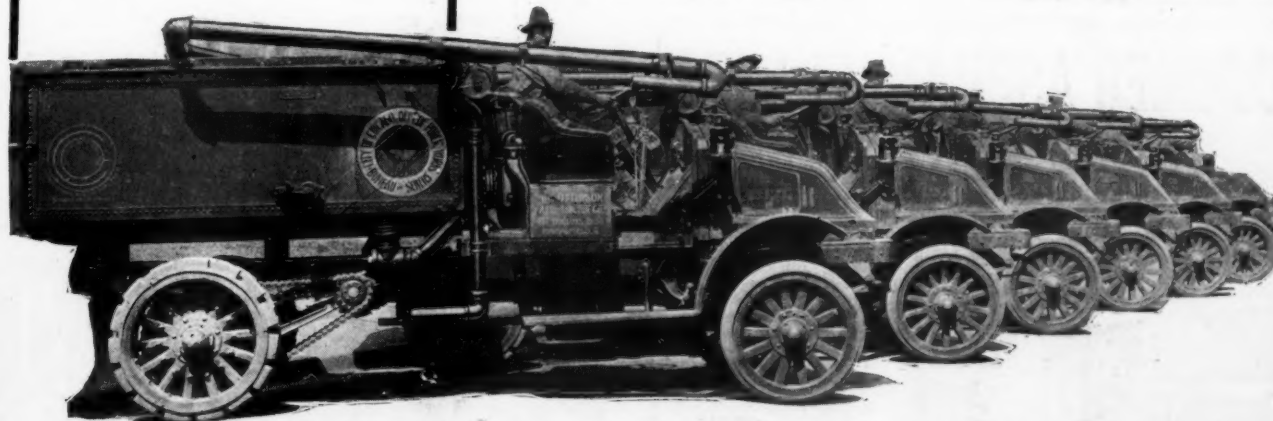
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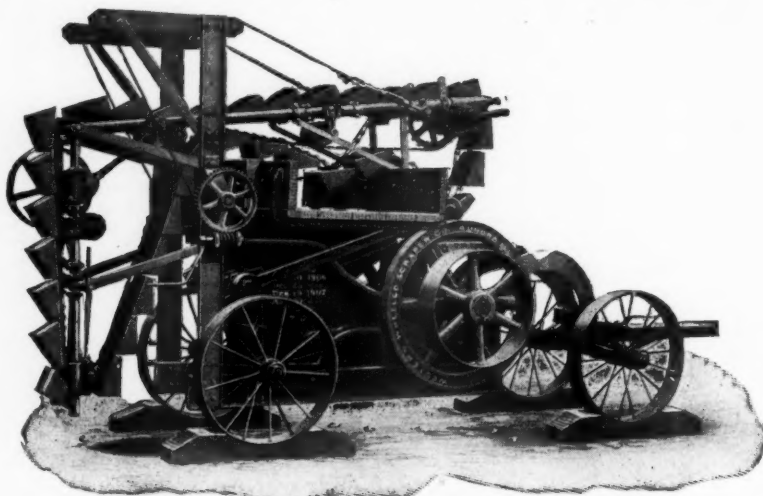


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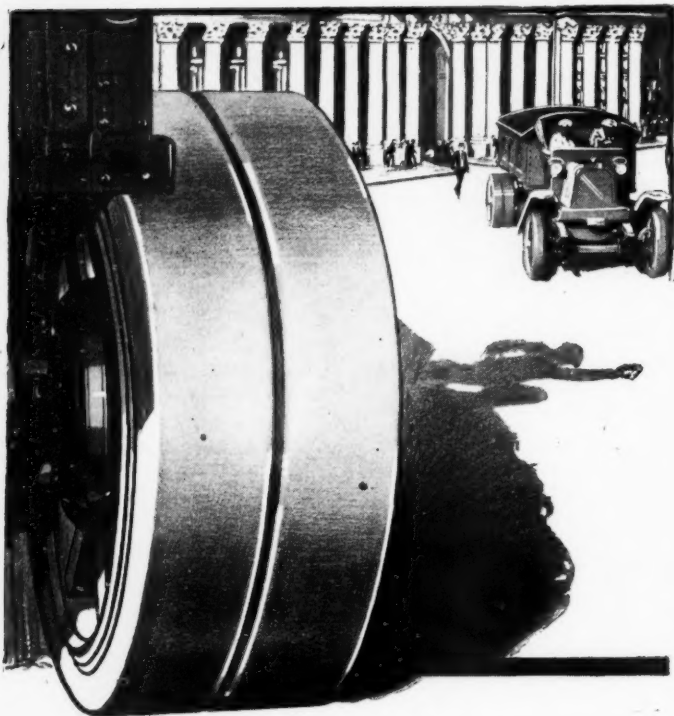
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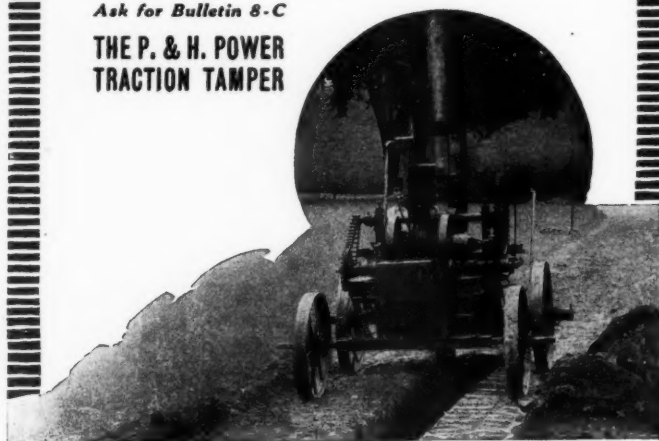
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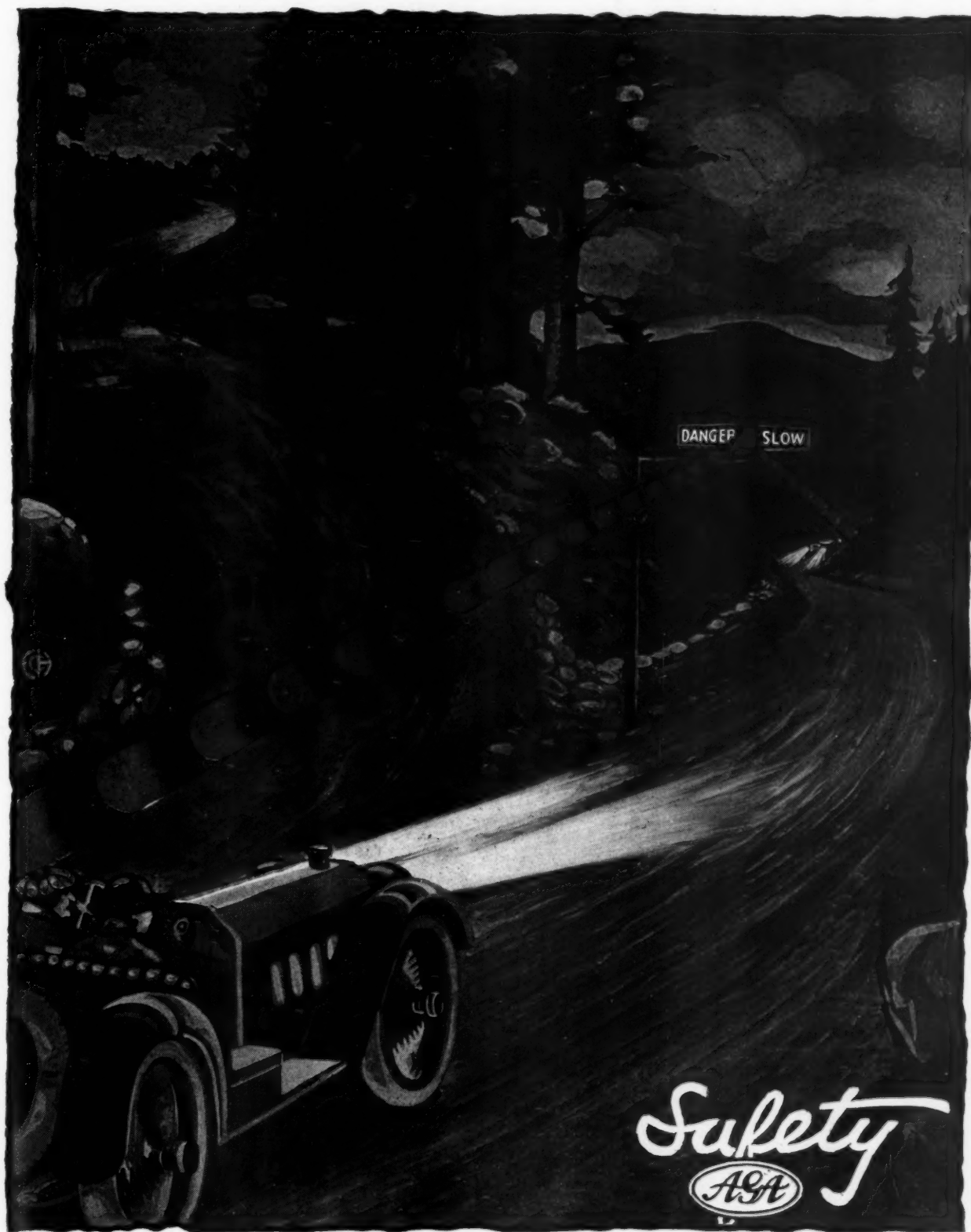
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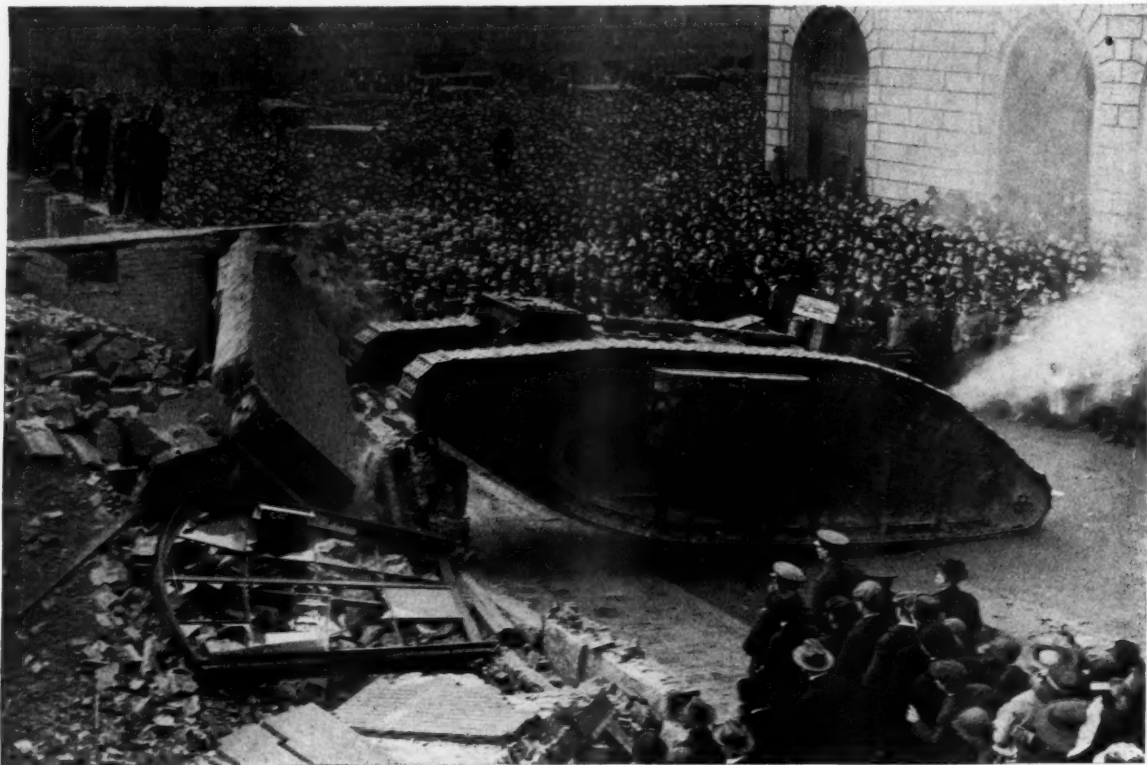
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(Photo by courtesy of Boston Herald)

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Municipal Journal

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NEW YORK, JULY 20, 1918

NO. 3

MUNICIPAL STORE AND MACHINE SHOP IN LOS ANGELES

Used for Construction as Well as Repairs—Asphalt Trailers Built and Sprinkling Wagons and Fire Engines Motorized—Repairs Automobiles and Trucks—Equipment of Machine Shop—
The Store Division.

By CHARLES W. GEIGER.

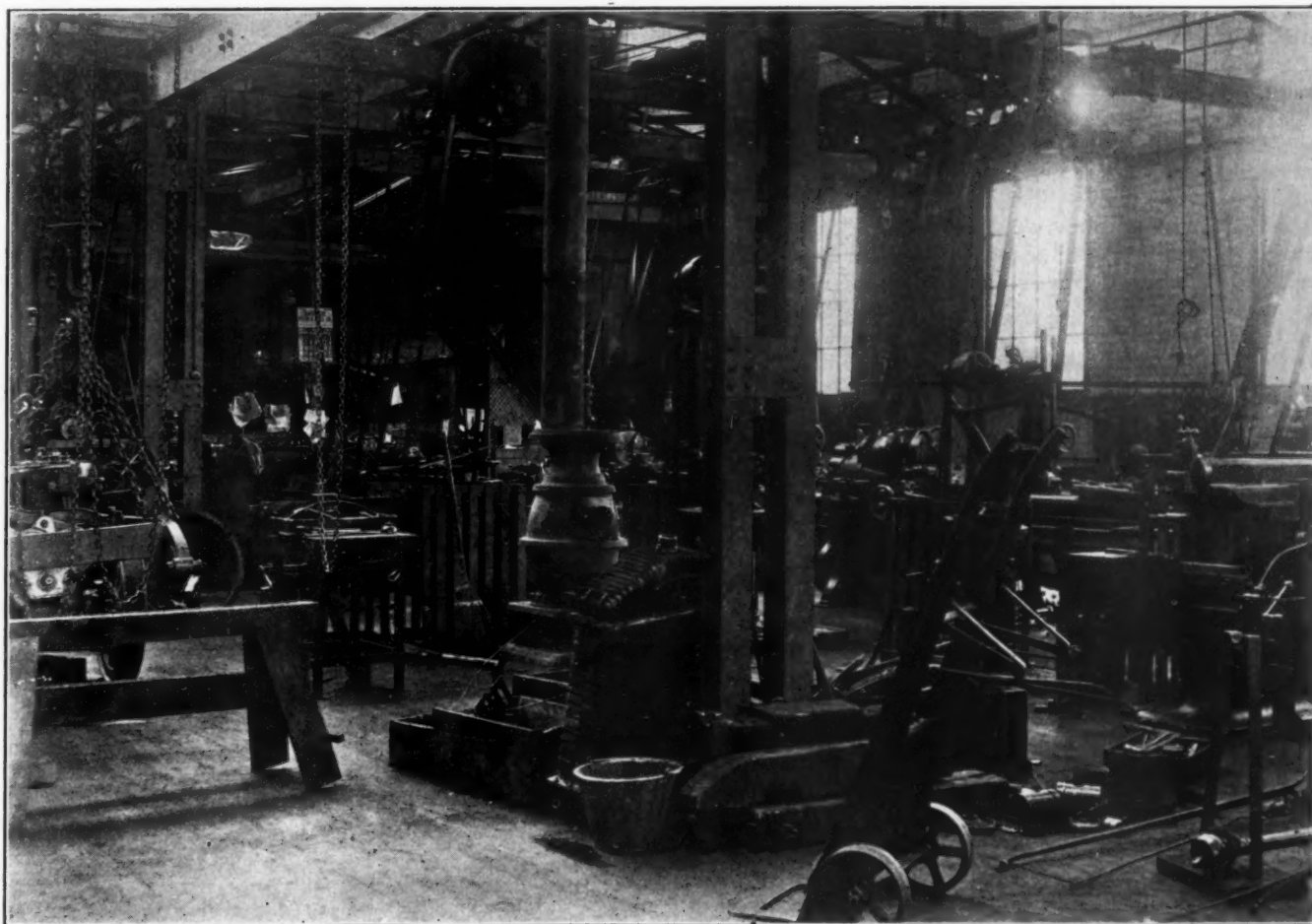
The municipal store and machine shops of Los Angeles, California, are housed in substantial buildings of brick and steel, especially designed for this purpose. Each is a success in every sense of the word.

The efficient system in the store and the completeness of the machine shops make it possible to supply departmental needs as quickly and as accurately from them as through any first-class commercial jobbing house or privately owned machine shop and at a lower price, considering the quantity and quality of the work.

The equipment of the machine shop is first-class in every respect, and is so complete that any kind of work

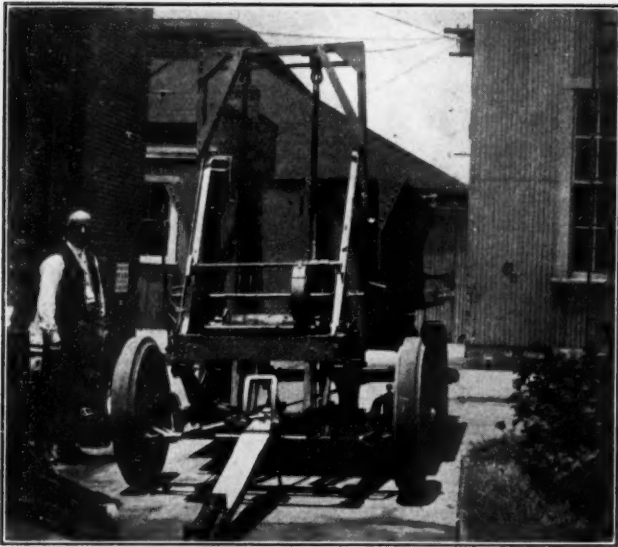
can be done. The shops not only repair but build up fire department trucks, auto trucks for the engineering department, etc.

Two five-ton trailers were recently turned out for the engineering department, to be used in hauling asphalt. Every part of the trailer was made at the shop with the exception of the front axle. This trailer has a dump body which is raised for dumping by a hand winch and lowered by means of a hand brake. It is equipped with a brake which can be operated from the driver's seat on the truck, two ropes connected to the brake lever leading to the front of the motor truck within easy



INTERIOR OF MACHINE SHOP.

At the left, chains of 5-ton crane, which handles large pieces of machinery. Electrical repair department occupies most of the shop at the left.



DUMP-BOTTOM TRAILER USED FOR HAULING ASPHALT. Notice brake lever at left; also construction of towing pole and yoke.

reach of the driver. By tightening one rope the brake is set, and by tightening the other rope the brake is released automatically. The towing pole of the trailer works in a yoke, which has connection with the steering gear. The end of the pole is connected to the rear of the truck by inserting a heavy pin through the end of a connecting link which is provided with a shock-absorbing spring to take the strain off the truck when starting and stopping. The trailer weighs 9,870 lbs. The truck that hauls this trailer was not designed for such heavy work, and it was necessary to put in an additional ball thrust bearing, to make it possible for the truck to haul the extra load.

These shops have recently converted eight horse-drawn sprinkler wagons to motor-drawn vehicles. Ford runabouts are used for motive power. The rear wheels of the Ford were removed and the end of the Ford frame is carried on the front axle of the sprinkler. The rear axle of the Ford was removed to near the center of the frame and sprockets placed on the ends of the axle and a chain drive connects these with sprockets bolted to the front wheels of the sprinkler. The shop made new valves for the sprinkler, and connected them up with operating levers and connections. Two levers just back of the seat but within easy reach of the driver operate the sprinkler valves. Special 22-inch brake drums are bolted onto the hubs of the rear wheels. Extending from the brake lever to within easy reach of the driver are two ropes, which automatically lock and unlock the brake by a mere pull. This allows the driver more freedom to operate the car. Two truss rods connect the front and rear axles, these being necessary because of the traction of the load being on the front wheels of the sprinkler.

The tank is divided into two chambers. The rear chamber, which is 7 ft. 6 in. long, is designed for the water, and the front chamber 2 ft. 6 in. long is designed as an air chamber. These chambers are connected by two valves. When the hydrant is connected with the water chamber for filling the same, the valves between the air and water chamber are opened. As the water chamber is filled, the water compresses the air into the air chamber, this pressure being 60 lbs. As the water is drained off through the sprinkler valves, the air pressure from the air chamber acts on the surface of the water to discharge the water under sufficient pressure to throw a stream wide enough to sprinkle the entire street.

On account of the heavy load and the slow speed, the

difficulty of keeping the engine cool made it necessary to apply an auxiliary cooling system. A one-eighth-inch pipe was run from the center of the fifth wheel on the tank wagon, and connected to the lower pipe connection between the radiator and engine. The other end of the pipe was connected by a rubber hose to a one-eighth-inch pet cock, screwed into the bottom of the water tank, taking water from the tank and discharging it into the water circulated through the engine, the surplus passing out through the overflow pipe at the top of the radiator.

The municipal shops are now motorizing the horse-drawn fire-engines. This has been found to be a paying investment, as the motor-drawn engines can make longer runs, are always ready, and immediately after answering an alarm to one fire are ready at an instant's notice to answer another. Motor-drawn engines also can climb hills much better than horse-drawn apparatus.



MOTOR BUILT BY MUNICIPAL SHOP FOR HAULING CARS USED IN CONSTRUCTING NEW OUTFALL SEWER AT HYPERION.

Equipped with 22 h.p. motor from old auto. Now used at the rock-crushing plant.

In changing from horse-drawn to motor-drawn, the front gear is taken entirely out, together with the seat, and connection made with a two-wheel motor-driven tractor under front end of engine frame. Christie internal gear, front-drive tractors of 70 h. p. are used for this purpose. These motor-driven engines make 25 miles an hour. They are operated by one man, with an engineer riding on the back.

Some very large wheels five feet in diameter with spokes $3\frac{1}{2}$ in. in diameter are being constructed now for use in an American-La France engine which is being motorized. An extra first size Metropolitan engine will furnish the traction. Four-inch solid rubber tires are used for these large wheels, which are built extra strong in order to carry the engine, which is much heavier and travels at a much higher rate of speed than when drawn by horses.

A well equipped paint shop is maintained which keeps all apparatus well painted. It has been found that the apparatus usually run for years after being given a first-class job of paint if occasionally given some touching up and revarnishing.

The municipal shops repair all automobiles and trucks of the following departments: Police, Health, Playground, Park, Building Department, Municipal Market, Public Utilities, Humane and other lesser departments. A large and well lighted garage is maintained at the shops where many of the automobiles are kept over night. Each department has space reserved. Two 280-gallon gasoline and distillate tanks supply these cars with fuel. There is also a space reserved for washing the cars. One of the employees starts in at 4 in the afternoon and washes up all cars during the night. All

cars are kept in first class condition, ready for use at a minute's notice.

In the machine shop there is a five-ton overhead traveling crane which enables all big pieces of machinery to be handled readily. There are two pits designed especially for repairing the steamers, and a long pit for automobile repairing. There is a 14-inch universal turret-head engine lathe for doing brass work and duplicating parts, three 16-inch, one 18-inch and one 26-inch lathe, all operated by a 15 h. p. electric motor. There is also a No. 3 universal milling machine, one Norton tool grinder, two shapers and two drill presses.

The electrical department is worthy of special mention, as 275 batteries are recharged here each month. This department is equipped with a mercury arc rectifier and a 5 h. p. generator. It also does all electrical work on cars in connection with ignition and lighting systems. New installations and repairs are made on all lighting systems. The batteries come in for recharging every 30 days, although some that receive more usage are recharged every two weeks. All batteries on the squad wagon are recharged here.

A complete and up-to-date vulcanizing department is maintained, where all vulcanizing is done at a much lower cost than would be charged by private firms.

The blacksmith shop is equipped with two forges, a power trip hammer and a furnace for spring work and heat treating and case hardening. Here is installed an air compressor for use in the machine shop and garage. A 10 h. p. electric motor operates all equipment in the blacksmith shop.

The wood working shop is equipped with a 16-inch planer, a variety saw, and a 36-inch band saw. General body and a variety of wood work for all departments is done here.

All sheet metal work is done in the lamp and radiator

repair department. In this department there is a large testing tank for testing radiators and tires. A compressed air tank is connected up with the radiators, which are placed in the testing tank, and if there are any leaks, the compressed air escaping shows just where the leaks are. A gas torch is maintained here for repairing the leaks. Chain blocks are mounted over the testing tank for lifting the heavy radiators. Here is also a home-made glass cutter for cutting headlights, windows for autos, etc.

A large galvanized iron building houses an erection shop, motorcycle repair shop and the salvage department. In the erecting shop there is a shear for heavy sheet metal. A portable oxy-acetylene cutting outfit is maintained in this department. This is used extensively in repairing electric light posts, fire and police alarm posts, etc., which frequently are damaged by motor trucks. If the repairing to be done to a post is very extensive, it is taken to the shop, otherwise the cutting outfit is mounted on a truck and taken to the post. Repairs can be made for about one-third the cost of a new post. In this department there are also tinner's rolls for rolling sheet iron and tin; also compressed air connections for riveting.

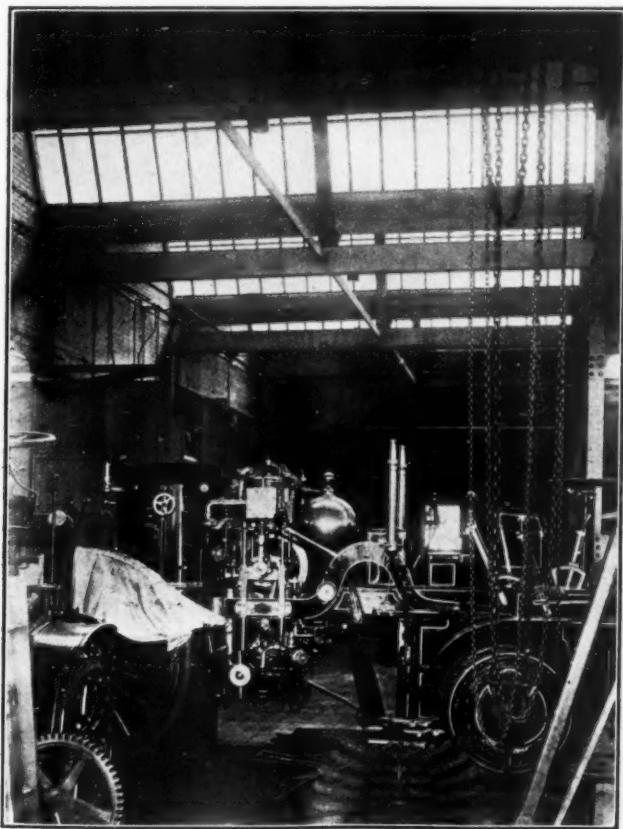
The motorcycle repair shop is equipped to make all repairs to the motorcycles that are used by the speed officers, police department, etc. Here are kept a number of extra machines so that in case an officer wrecks a machine, another is ready for his use. All the motorcycles are standardized, the Indian being used exclusively. In the store there are kept a supply of practically all parts for use in repairing the motorcycles.

The salvage department is used as a store room for all materials from all the city departments that have served their original purpose and which are of no further use to the city. All the material turned into the salvage department is classified, and at certain intervals is sold. Recently 1,500 feet of old rubber hose was sold at from 5 to 7 cts. per foot.

There is an extensive area that extends around the buildings, which is concreted, and which is used for repairing and erecting large trucks. An incinerator takes care of all refuse, etc. Out in the yard there is maintained a department for cleaning machinery parts with distillate sprayed on by compressed air. A trough has been built here for catching the grease and dirt. Large pieces of machinery are handled here by means of a swinging crane.

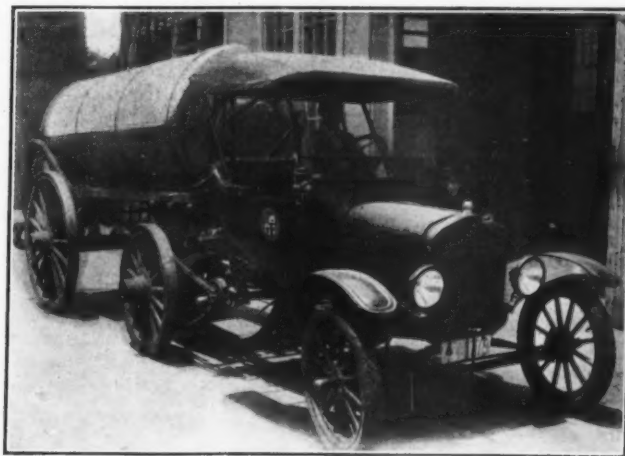
THE STORE DIVISION.

All pipes, bars, rods, etc., are carried in the store room in racks. When the machine shop needs any such material, the foreman gives an order to the store department.



IN THE MACHINE SHOP.

Shows saw-tooth roof, 5-ton crane and fire engine that has been connected to motor tractor.



SPRINKLER WAGON WITH FORD TRACTOR.

ment, and the steel is cut off by a power saw and delivered to the shop.

A large room built of brick and so designed that it is safeguarded from fire is used for carrying various kinds of oil for the city departments. It has no windows, receiving light from a skylight, and the two entrances are guarded with automatic fire doors.

The Store Division has been organized with the following purposes in view:

To provide proper material at the lowest cost and with the lowest possible permanent investment.

As large consumers, to take full advantage of the markets, buying so far as possible direct from the manufacturers.

To maintain standards, by seeing to it that only materials covered by specifications are ordered and supplied, in so far as possible.

Proper inspections and tests to insure that materials are up to specifications.

To properly, promptly and accurately care for, handle and account for all materials, keeping same in as few places as practicable and in such shape that they may be ready to use or move with the least possible delay.

The store is located within a reasonable distance from the commercial center and just within the free delivery zone. The arrangement is such that there is a place for everything and all material is segregated according to kind, size, etc., and every handling detail is planned along the lines of economy, promptness and accuracy. The store has been laid off in sections, and material grouped to permit accuracy and efficiency in handling. Experi-

many purposes are made by the store department on multigraph.

4—Automobile, motorcycle accessories and supplies. Sufficient parts for Fords and Indian motorcycles are kept on hand to practically rebuild complete machines.

5—Hardware-household.

6—Pipe, belting, valves, etc.

7—Rubber goods, leather goods, cordage, etc.

8—Belts, nuts, screws, washers.

9—Paints, oil, grease, waste.

10—Bar iron, steel, brass, metal products.

Each section has been arranged alphabetically. The first figure following each item listed in the catalogue indicates the section in which each article is carried, while the figures following denote the identifying number in that section.

MUNICIPAL REVENUES AND EXPENDITURES.

The Bureau of the Census is soon to issue a special report entitled "Specified Sources of Municipal Revenue, 1917," compiled under the supervision of Starke M. Grogan, chief statistician for statistics of states and cities, which will contain a number of figures of interest. The statistics refer only to those cities having 30,000 population or more, of which there were 219 last year.

For these cities taken as a group, the proportions which the various classes of revenues formed of the



INTERIOR OF MUNICIPAL STORE.
Showing how sections are arranged.

enced stock clerks, under the direction of the store-keeper, handle all material in a certain section or group of sections. Each section has its stock listed in a stock ledger, alphabetically arranged, and each item is given an item number, both section and item numbers conforming to the standard list as well as to the material as lined up on shelves and in the warehouse.

One hundred and sixty copies of a catalogue for the various city departments were prepared by the store department, through the use of a mimeograph. This catalogue gives a list of all material regularly carried in the store. These copies are made on substantial paper and are sold to the different departments at \$2.50 each to help defray the expense of getting up the catalogue. If any department wants some certain material, they can tell by consulting the catalogue whether that particular stock is carried for immediate delivery.

The stock room is grouped in sections as follows:

- 1—Athletic supplies, such as balls, bats, tennis nets.
- 2—Drugs, hospital supplies, emergency equipment for parks, etc.
- 3—Stationary and office supplies. Printed forms for



MUNICIPAL STORE IN BUILDINGS AT RIGHT AND LEFT
OF DRIVEWAY.

Building at rear occupied by salvage, motorcycle repair and erection departments.

total during the fiscal year 1917 were: Property taxes, 63.9 per cent; earnings of public service enterprises, 10 per cent; special assessments and special charges for outlays, 7.8 per cent; highway privileges, rent, and interest, 5.5 per cent; subventions, grants, gifts, donations, and pension assessments, 4.1 per cent; liquor taxes, 3.5 per cent; earnings of general departments, 2.5 per cent; business taxes other than liquor (including those collected without the issue of licenses) and non-business license taxes, 2.1 per cent; fines, forfeits, and escheats, five-tenths of one per cent; and poll taxes, two-tenths of one per cent.

Special discussion is given of the subject of liquor taxes, in which it is stated that in 1903 nine-tenths of the cities received such taxes, whereas last year only about seven-tenths did so; and the proportion of total revenue derived from such taxes decreased from 6.4 per cent in 1907 to 3.5 per cent in 1917. The falling off in this class of municipal revenues has become a matter of sufficient importance in the judgment of the Census

Bureau, to justify a study of certain sources from which can be derived revenues to take the place of those formerly supplied by the liquor traffic. These sources are specified as "special assessments, business taxes other than on the liquor traffic, general license taxes, and license taxes on dogs."

Business other than the liquor traffic yielded only nine-tenths of one per cent of the total revenues of cities of over 30,000 during the fiscal year 1917; and during preceding years the corresponding proportion varied but slightly, having been equal to either one per cent or one and one-tenth per cent for each of the years for which figures are given in the report.

Some of the cities, however, raised considerable proportions of their revenues through license taxes of this character. Following is a list of those which reported 5 per cent or more of their total revenues as derived from such sources during the fiscal year 1917:

Per Cent	Per Cent
Birmingham, Ala. ....17.1	Nashville, Tenn. 8.3
Montgomery, Ala. ....14.8	Portsmouth, Va. 7.5
Lynchburg, Va. ....14.8	Macon, Ga. 7.4
Savannah, Ga. ....11.3	Chattanooga, Tenn. 7.1
Norfolk, Va. ....11.2	Shreveport, La. 6.9
Roanoke, Va. ....11.0	Wilmington, N. C. 6.5
Mobile, Ala. ....10.6	Atlantic City, N. J. 6.4
Charleston, S. C. ....10.6	Springfield, Mo. 6.2
Columbia, S. C. 9.5	Atlanta, Ga. 6.1
Knoxville, Tenn. 8.5	Joplin, Mo. 5.5
Augusta, Ga. 8.4	Tampa, Fla. 5.0

Those cities in which municipal revenue from the liquor traffic is no longer received, or in which this form of revenue is about to be discontinued, and which are, therefore, in search of other sources of revenue, will find in the census report a valuable collection of data. There is given for each state a brief summary of the methods of raising revenues through special assessments, business taxes other than on the liquor traffic, general license taxes, and license taxes on dogs, and for each city of over 30,000 a detailed list showing the kinds of business on which license taxes are collected and the rates of levy.

Next to taxes, the largest source of revenue of American cities of more than 30,000 population in 1917 was earnings of public service enterprises, which amounted to \$106,158,788. Of this amount \$83,858,440 came from water supply systems. The revenues for these cities averaged \$32.04 per capita.

While the expenditures of the cities varied considerably, there was little difference in the averages for the several size-groups of cities having less than 300,000 residents. The average for those from 30,000 to 50,000 was \$25.11; that for those of 50,000 to 100,000 was \$24.75, and that for those of 100,000 to 300,000 was \$26.39. For the largest cities, however, considerably higher figures are shown—\$37.50 for those of 300,000 to 500,000 and \$38.17 for the group having more than 500,000 population each.

It should be said, however, that the differences between these last figures and those for the three smaller groups are due in part to the fact that the per capita county expenditures are included in the figures for such of the larger cities as are situated in counties.

A comparison of figures for the 146 cities for which data are available as far back as 1903 shows that the per capita governmental cost payments have increased from \$24.64 in 1903 to \$33.26 in 1917, or about 35 per cent. The main increase has been in the items of expenses of general departments and interest. The per capita expenditures for utilities for permanent improvements were \$8.68 in 1917 compared to \$8.23 in 1903. The per capita expense of public service enterprises increased from \$1.10

in 1903 to \$1.39 in 1917; but the expenses were less than half the net revenues from such enterprises, these having been \$2.42 per capital in 1903 and \$4.13 in 1917.

Although the total expenditures for governmental costs of the 146 cities increased nearly 35 per cent from 1903 to 1917, the figure for the latter year, \$33.26, was somewhat less than the one for 1915, or \$34.53. The per capita expenditures by the cities for the years previous to 1917 (the beginning of our war expenditures) were roughly three times as great as those of the nation. Seventy-eight of the cities decreased their indebtedness during the year 1917, while 141 increased it.

WATER WORKS OPERATION.

Determining Amount of Leakage from Gravity or Pumping Supply Mains—Leaks in Stream Crossings—Locating Leaks.

The general procedure of tracing down the points at which leakage and waste occur consists of passing consecutively from large areas to smaller and from these to the exact points that demand remedial action. This plan applies especially to important leaks and localities of excessive waste, but is also useful in stopping leaks that are distributed generally throughout the system, the eliminating of them being carried on section by section, each section in order being made a center of effort until the results obtained in it are at least temporarily satisfactory.

The plan of subdivision of the distribution system into sections will be different in each case, being governed by the peculiarities of the layout of the system, location of valve gates and other details. Some suggestions may be offered, however, which will be of more or less general application.

Where there is a long supply main from impounding reservoir or pumping station to distributing reservoir, this may be studied first. If the main lies largely below the level of the distributing reservoir, a simple plan is to close the intake valve at the impounding reservoir or the valve at the pumping station, with the water in the main standing level with the outlet into the reservoir, and note whether the water level lowers in the main at this outlet. Where the outlet cannot be inspected, a pet-cock or corporation can be tapped into the main at a point about five or ten feet lower in elevation than the outlet, and a rubber tube or hose attached thereto. When the valve in the main is closed, the end of the tube is lowered until the water just overflows from it, and the elevation of the end noted. By gradually lowering the end of the tube so as to keep the water in it just ready to overflow, the rate at which the water level in the pipe line is falling can be learned. Knowing the size of the pipe and the profile of the line, the rate of leakage can be calculated. The investigator must of course be certain that the valve does not leak, so as to allow water to escape from the pipe line (if it is a pumping plant), or so as to allow water to continue to enter it from the impounding reservoir.

If the line rises at places above the level of its outlet, this method of course does not test the tightness of such portions as lie above this level. Such portions can be tested in a similar way if there is a valve at or near the outlet. In fact, in the case of a gravity line between reservoirs the better plan is to close the valve near the outlet, if there is one, and note the fall in water level in the pipe at the intake. But in many lines there is no valve or other gate except at the intake.

In a few cases venturi meters have been placed near both intake and outlet ends of a line connecting two reservoirs, and their readings compared to learn the

ANALYSIS AND QUALITY OF WATER—PUBLIC USE OF GROUNDS (Continued)
Reports from Several Hundred Water Works Superintendents Relative to Their Plants—Last of Four Tables Compiled from Data Furnished This Year Especially for This Purpose.

City and state.	Municipal or private plant	Are regular analyses of water made?	By whom are analyses made?	How often are analyses made?	Is quality of water satisfactory in all respects?	To what extent are grounds around reservoirs and pumping stations used by the public?
New Mexico						
East Las Vegas	Private	No	.....	.....	Yes	Very little
Raton	Municipal	No	.....	.....	Yes	None
New York						
Amityville	Private	No	Laboratory	5 years ago	Yes	None
Carthage	Municipal	Yes	Health Department	Semi-annually	Yes	.....
Corning	Municipal	Yes	County Bacteriologist	Daily	Yes	None
Cortland	Municipal	Yes	Syracuse University	Every two months	Yes	None
Dansville	Municipal	Yes	Genesee Lab. & Cornell Univ.	Semi-annually	Yes	None
Elmira	Municipal	Yes	Supt. Filtration Plant	Daily	Yes	None
Glens Falls	Municipal	Yes	State & County bacteriologists	2 or 3 times a year	Yes	None
Gloversville	Municipal	Yes	State Health Department	Frequently	Yes	None
Hoosick Falls	Municipal	Yes	State	Semi-annually	Yes, except on flood time	None
Hornes	Municipal	Yes	State	Annually	Yes	.....
Jamestown	Municipal	Yes	Resident chemist	Daily	Yes	None
Kingston	Municipal	Yes	Health physician	Quarterly	Yes	None
Lancaster	Municipal	Yes	State Department	.....	Yes	None
Mechanicville	Municipal	No	{ Private chemists	Semi-annually	Yes	None
Mount Morris	Municipal	Yes	{ City Laboratory	Monthly	Yes	To some extent
Mc. Vernon	Private	Yes	.....	Daily	Yes	Skating sometimes permitted
Nassau	Municipal	Yes	Keeper of the Reservoir	Biennially	Yes	None
Newburgh	Municipal	Yes	State Board of Health	Weekly	Yes	None
Olean	Municipal	Yes	City operators	Every 2 or 3 days	Yes	None
Ossining	Private	Yes(h)	.....	Monthly	Not always	None
Oswego	Municipal	Yes	State	Weekly	Yes	None
Peekskill	Municipal	Yes	Private chemists	Every 90 days	Yes	None
Seneca Falls	Private	Yes	Pump station engineer	Monthly	Yes	None
Solvay	Corporation	Irregularly	Private bacteriologist	.....	Algae taste & smell at times	None
Spring Valley	Municipal	Yes	County bacteriologist	Semi-monthly	Yes	.....
Tarrytown	Private	Yes	City chemist	Monthly	Yes	.....
Tonawanda	Municipal	Yes	Superintendent	Bi-weekly	Yes	.....
Waterloo	Municipal	No	Supt. & State Laboratory	Weekly and monthly	Yes	Skating on lake of about 24 acres
Waverly	Private	Yes	.....	Every 2 weeks	Yes	.....
North Carolina						
Charlotte	Municipal	Yes	City biologist	Daily	Yes	Only on water-shed grounds
High Point	Municipal	Yes	State Board of Health	Monthly	Yes	None
Lenoir	Municipal	Yes	State	Monthly	Pure, but a little muddy	None
New Bern	Municipal	Yes	State chemist	Monthly	Pure, No, very hard	None
Raleigh	Municipal	Yes	State Laboratory of Hygiene	Monthly	Yes	None
Rocky Mount	Municipal	Yes	State Board of Health	Monthly	Yes	None
Statesville	Municipal	Yes	.....	.....	Yes	None
North Dakota						
Devils Lake	Municipal	No	State University	.....	Yes (Artesian well)	None
Grand Forks	Municipal	Yes	State Pub. Health Lab.	Tri-weekly	Yes	.....
Wahpeton	Municipal	Yes	.....	.....	Yes	None
Ohio						
Barberton	Municipal	No	.....	.....	Yes	None
Bryan	Municipal	No	State	Annually	Yes	None
Celina	Municipal	No	.....	Daily	No, too hard for washing	None
Cincinnati	.....	Yes	W. W. chemists & bacteriologists	.....	Yes	None
Cleveland	Municipal	Yes	Water Dept. bacteriologist	Daily	Yes, practically 90% filtered	None
Conneaut	Private	Yes	Superintendent	Daily	Yes	None
Coshocton	Municipal	Yes	State Board of Health	Annually	Yes	None
Dayton	Municipal	Yes	Division of Health	Daily	Yes	Used for parks and picnic grounds
Defiance	Municipal	No	.....	.....	No	None
Eaton	Municipal	Yes	State Board of Health	Every two years	Yes	None
Franklin	Municipal	No	State Board of Health	Every two years	Yes	None
Gibsonburg	Municipal	Yes	State Board of Health	.....	Yes	None
Girard	Private	.....	.....	Weekly	Yes	None
Huron	Municipal	Yes	.....	Daily	Yes	None
Kent	Private	Yes	City chemist	Daily	Yes	None
Lima	Municipal	Yes	City chemist	Daily	No	None
Marletta	Municipal	Yes	.....	.....	Yes	None
Middletown	Municipal	No	.....	Daily	.....	None
Milan	Municipal	Yes	.....	.....	.....	None
Mt. Gilead	Private	Yes	State Board of Health	Every two years	Yes	None

[illegible]

h-Bacterial count and B. Coll tests frequently; l-Lactose peptone bile media used to test for B. Coll, being presumptive for contamination.

loss from the main between them. But this is expensive and not common. Instead of meters, it is in some cases possible to measure the inflow and outflow by weirs placed at intake and outlet chambers. In any case, the loss between any two points in a pipe line can be determined quite approximately by taking pitometer measurements at such points and comparing the synchronous readings.

In a similar way, lines of mains at stream crossings can be tested for leaks, a valve being closed at one end of the crossing and the fall in water level at the other end noted. In many cases, however, the pressure in the main is too great to permit adopting this plan. In such cases the valve at the entrance end of the crossing also may be almost closed, the observer listening for the singing that indicates water passing through it. If there is no such singing audible, there may still be a small amount of leakage. To determine whether this is the case, a corporation cock can be tapped into the main on each side of the valve and the two connected by a line of $\frac{5}{8}$ -inch pipe, a sensitive meter being inserted in this line. As in the other cases, there must be surety that the two valves in the main are perfectly tight. If the supply that this main carries cannot be shut off temporarily, then the use of the pitometer or other form of meter simultaneously at both ends of the crossing is probably the only alternative.

Where there are two supply mains from distributing reservoir to town (as is always desirable), one of these can be tested by closing the valve nearest to the first branch line of the distributing system, shutting off the intake to this main, and feeding the main so shut off from the other main by a line of small pipe carrying a sensitive meter. The meter can then be reversed end for end and the other of the duplicate mains tested in the same way.

Having determined that there is leakage in a main, there still remains the locating of the exact point where it occurs before it can be remedied. First, careful inspection should be made of all blow-offs, valves or other special features in the line. Occasionally a blow-off gate is found not entirely closed or a valve leaking around the stem. Another susceptible point is at stream crossings, whether the line rises up to and crosses on a bridge floor (when the joints at the angles where the line passes from the bridge to the underground portion are points of special danger), or lies in the stream bed (when freshets, ice, logs, etc., may loosen a joint or break the pipe).

If the leak is in a joint or joints or a cracked pipe underground, the first effort should be to locate signs of such leak in the form of escaping water at the ground surface, low spots near the line damper than seems accountable for by natural causes, vegetation growing over or near the line more luxuriantly than elsewhere in the vicinity. If these signs do not locate the leak, the final alternative (except the enormously expensive one of uncovering the whole line) may be adopted of using a listening instrument; a steel rod being driven through the ground until it is in contact with the pipe and an appliance similar to a telephone receiver placed on the end of it, when the singing of escaping water at either end of the pipe with which the rod is in contact can generally be heard. A leak of any size can generally be heard for several pipe lengths, but if every alternate pipe is so tested by inserting the rod at 24-foot intervals, there will be little danger of passing a leak through which even the finest stream is passing with any velocity. Mere

"sweating" of a joint of course cannot be located in this way, nor in any other except uncovering the joint and looking at it.

Where a pipe line is under water and not more than ten feet below the surface, the same listening appliance can be used. If in deep water, a diver is required for locating leaks; and all leaks must generally be repaired by divers if more than two or three feet below the water surface.

Repairing a leak when found is generally very simple compared to the finding of it. Methods of repairing leaks other than tightening joints by calking will be considered further along in this series of articles.

ENGINEERS AND PLANNERS FOR HOUSING PROJECTS.

The government is progressing rapidly with the preliminary work of providing for the housing of labor employed at shipping and large munitions plants, having appointed engineers and architects for a number of the more than 600 that it has in view. The appointments so far made public are as follows:

Engineers.

- Ernest W. Branch, of Quincy, project at Quincy, Mass.
- Chester & Fleming, of Pittsburgh, project at Erie, Pa.
- James L. Greenleaf, of New York, project at South Charleston, W. Va.
- L. J. H. Grossart, of Bethlehem, project at Bethlehem, Pa.
- Nicholas Hill, of New York, project at Norfolk and Portsmouth, Va.
- S. E. Kieffer, of San Francisco, project at Mare Island (Vallejo), Cal.
- R. Winthrop Pratt, of Cleveland, O., project at Alliance, O.
- E. W. Sales, of Watertown, project at Watertown, N. Y.
- Sawyer Bros., of Spokane, project at Puget Sound (Bremerton), Wash.
- W. S. Shields, of Chicago, projects at Rock Island, Moline and East Moline, Ill., and Davenport and Bettendorf, Ia.
- Alfred Terry, of Bridgeport, project at Bridgeport, Conn.
- Tribus & Massa, of New York, project at New London, Conn.
- Weston & Sampson, of Boston, project at Bath, Me.

Town Planners.

- Mr. De Forest, of Rochester, project at Alliance, O.
- J. L. Greenleaf, of New York, project at South Charleston, W. Va.
- P. R. Jones, of San Francisco, project at Mare Island (Vallejo), Cal.
- H. J. Kellaway, of Boston, project at Quincy, Mass.
- Geo. E. Kessler, of St. Louis, projects at Rock Island, Moline and East Moline, Ill., and Davenport and Bettendorf, Ia.
- C. D. Lay, of New York, project at Erie, Pa.
- Lorring & Underwood, of Boston, project at Bath, Me.
- E. T. Mische, of Portland, Wash., project at Puget Sound (Bremerton), Wash.
- T. W. Sears, of Philadelphia, project at Bethlehem, Pa.
- A. A. Shurtleff, of Boston, project at Bridgeport, Conn.
- F. Vitale, of New York, project at Watertown, N. Y.

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AN UNJUST LAW.

In whatever respect individuals may disagree politically with Supreme Court Justice Charles E. Hughes, it will be generally admitted that as a judge and in deciding upon the justice of a question he has few if any equals in the country. When, therefore, he states publicly, and after several years of consideration of the subject, that certain features of a law are unjust, his opinion should carry great weight.

Municipal Journal and practically all other periodicals have from time to time called attention to what we consider the injustice of the new postal regulations relative to second class mail. Readers might think that periodicals were biased in their consideration of this matter and that their objection to the law was based on purely selfish reasons. Justice Hughes, however, is in no way interested in the publishing business, and he was a member of a commission appointed in 1911 to consider this very question, so it does not seem possible for any one to claim that he is either biased or not thoroughly informed on this subject. By virtue of months of painstaking investigation of them, he is able to speak on postal matters with technical authority and he has voluntarily done so in a letter which we print below.

Mr. Allen H. Richardson, June 17, 1918.
Publishers Advisory Board,
200 Fifth Avenue, New York.

Dear Sir: In answer to your letter, I beg to say:

I prefer not to accept a retainer to appear before legislative committees upon matters of general policy, as in such matters, if I have anything to say, I desire to speak only as a citizen.

I have no hesitation in saying that I regard the zone system of postal rates for newspapers and periodicals, coming under the definition of second-class mail matter, as ill advised. The Commission on Second-Class Mail Matter (appointed in 1911), of which I was a member, considered this question and reported unanimously against the zone system. We said in that report:

"The policy of zone rates was pursued in the earlier history of our post office and has been given up in favor of a uniform rate in view of the larger interest of the Nation as a whole. It would seem to the Commission to be entirely impracticable to attempt to establish a system of zone rates for second-class matter. * * *

"Progress in the post office, with respect both to economy in administration and to public convenience, leads away from a variety of differential charges to uniform rates and broad classifications."

In my judgment the zone system for second-class mail matter is unjust to the publisher and unjust to the public. It not only imposes upon the publisher the additional rates upon a sectional basis, but it makes necessary the added expense for the necessary zone classifications at a time when every economy in production and distribution is most important. It introduces a complicated postal system to the inconvenience of the publisher and public when there should be a constant effort towards greater simplicity. There is no more reason for a zone system of rates for newspapers and magazines than for letters.

Newspapers and magazines are admitted to the second-class postal rates on the well established policy of encouraging the dissemination of intelligence, but a zone system is a barrier to this dissemination. If it is important that newspapers and magazines should be circulated, it is equally important that there should not be sectional divisions to impede their general circulation through the entire country.

We are proud at this moment of our united purpose, but if we are to continue as a people to cherish united purposes and to maintain our essential unity as a nation, we must foster the influences that promote unity. The greatest of these influences, perhaps, is the spread of intelligence diffused by newspapers and periodical literature. Abuses in connection with second-class mail matter will not be cured by a zone system of rates. That will hurt the good no less than the bad, and perhaps some of the best sort of periodical literature will be hit the hardest.

We do not wish to promote sectionalism, and "one country" means that in our correspondence and in the diffusion of necessary intelligence we should have a uniform postal rate for the entire country. The widest and freest interchange is the soundest public policy.

I hope that Congress will repeal the provision for the zone system which is decidedly a looking-backward and walking-backward measure.

Very sincerely yours,

(Signed) CHARLES E. HUGHES.

This letter is self-explanatory and could hardly be made stronger by one who gives judicial consideration to every sentence that he writes. When therefore Justice Hughes not only condemns the law which was passed by Congress a few months ago as all-advised, impracticable, unjust, complicated, a barrier to the dissemination of intelligence, and promoting sectionalism, but also expresses the hope that Congress will repeal the objectionable features of the law, publishers feel that they have the strongest kind of backing in urging their readers to use their influence with their representatives in Congress in a fight to secure the prompt repeal of the iniquitous and reactionary Postal Zone Law.

We urge each of our readers to again read the letter above, and then to write at once to their senators and representatives in Congress urging them to see that the objectionable law be repealed at the earliest opportunity.

SHALL CITIES HAVE A VOICE IN THEIR OWN FINANCING?

The Capital Issues Committee of the War Finance Corporation has announced that new local committees are being appointed to replace the temporary local committees who have served since February in the task of determining the necessity of financial operations in their jurisdiction. The new committees, in taking over the work, will be vested with unwritten but effective power to decide what bond issues may be issued by the cities. Over issues of less than \$100,000 their power will be absolute, and in the case of those of more than \$100,000 they will act in advisory capacities to the federal committee. City officials have already become acquainted with the procedure and they fully realize how municipal improvements dependent on the issuance of securities are wholly within the power of these committees.

The names of the members of the local committee for the New York district have been published. This body of twenty-seven consists mostly of bankers and finan-

ciars; three are federal finance officials; six are industrial corporation officers; two are public utility company presidents, and one is president of the state chamber of commerce. These men can represent business, industry, public utilities and finance; perhaps they can also represent the human needs of the people who live in cities—those human needs which are expressed through municipal organization and function. But why is it necessary that the public utilities be represented? Because public utility securities are involved? So also is municipal financing. Why then are not the cities represented? Is there any valid argument against municipal representation which would not be equally applicable to that of utility corporations?

It is true that the cities will be given full opportunity to present their individual cases before the tribunal—but so will the other interests concerned. There is no question of the high standing of the members of this committee or of those appointed in other districts. It is also admitted that there are some city officials who do not move in the same exclusive social, intellectual or financial circles as these gentlemen. But it seems probable that in each district at least one city official might be found who could express an opinion as to the interests of the people where the question of the necessity of a public bond issue is involved. The presence of at least one municipal representative at the deliberations of the committee seems to us desirable, even if he only reported to his fellow officials and citizens what he had learned at the meetings.

This is but another phase of the subject discussed in these pages last week—the urgent necessity for proper organization of the cities for the conservation of their interests and their adequate representation on official bodies concerned with them. The Capital Issues Committee is a vital case in point. The fact that the cities are tongue-tied or dumb is no reason why they should also be gagged.

PREVENTING MALARIA AROUND CAMP BOWIE*

Work in the Extra Cantonment Zone at Fort Worth, Texas—Conditions That Favor Mosquito Breeding—Three Methods of Control.

By W. A. HARDENBERGH†

Twenty years ago the cause of malarial fevers—the familiar fever and chills of our fathers' times—was unknown. It had been noted that people living near or spending the night near swamps or pools of standing water were especially subject to the disease, the origin of which was ascribed to the mists or air rising at night from these waters, whence the name, "mal-aria," bad air. Following the discovery that yellow fever was spread only by the bite of a mosquito, it was found that malaria was caused by the bite of a certain variety of mosquito, which must have previously bitten someone infected with malaria. Malarial parasites, which cause the disease, are carried only by the *Anopheles* mosquito. This variety is rather timid and feeds mainly at night, returning before daylight to its resting place. This night-feeding habit of the *Anopheles* explains the old-time belief that night air was the cause of malaria. The *Anopheles* may be recognized easily from the fact that when resting it stands almost on its head, the hind legs sticking into the air.

*From "Pass in Review," a newspaper "published exclusively in the interest of the soldiers in training at Camp Bowie and Tallaferro, Barron and Carruthers aviation fields," near Fort Worth, Texas.

†Chief Sanitary Engineer, U. S. Public Health Service; formerly assistant editor of *Municipal Journal*.

Malaria is rarely the cause of death. It may be and frequently is a contributing cause and yearly it causes a large economic loss due to loss of time through sickness, bills for the doctor, et cetera, and is one of the main causes of the inefficiency of labor in many of the Southern States. If malaria should be allowed to work unchecked throughout the areas in which great numbers of our soldiers were in training, it might easily render temporarily unfit for duty, hundreds of thousands of men. If it costs a thousand dollars to fit a soldier for the firing line, the loss can easily be computed. Besides, we may need these soldiers very badly, just as we did in the Spanish War when the ravages of malaria and the intestinal diseases threatened to reduce our expeditionary forces to but little more than a corporal's guard.

REALIZE EMERGENCY.

With the movement of the troops to the Southern cantonment areas last fall, the United States Public Health Service recognized that an emergency existed. Many of the cantonments were in the most heavily infected regions, from a malarial standpoint, that existed in the United States. Plans were at once made by the Service to inaugurate, in connection with the general sanitation of the zones around these camps, a vigorous campaign against the *Anopheles* mosquito. During the winter surveys were made and all preparations completed for mosquito control work early in the spring.

Though Fort Worth is located in a section in which there is usually but little malaria, there existed the danger that by the transfer of troops from some of the Southern States where malaria is present, the necessary cycle from man to mosquito to man would be completed and malarial outbreaks would occur. In April a survey of possible mosquito breeding places in the neighborhood of Camp Bowie and three aviation fields was made, equipment ordered and plans made for the necessary work.

These plans for the campaign against the *Anopheles* mosquito contemplated such work as might be necessary for the destruction of their shelters and breeding places. Mosquitoes breed only in still water where the eggs laid by the female may develop undisturbed into larvae or wrigglers, as they are locally called. These, after seven to nine days, pupate, or turn into tumblers, technically called pupae, which are shaped like a comma. After about thirty-six hours in this shape, the adult mosquito emerges and flies away. During the nine to eleven days necessary for development from the egg to adult, water is necessary. This water is found in the quiet pools along streams, in stagnant ponds, in rain barrels, in tin cans thrown out of the back door and later filled by the rain, and in various other places. If such breeding places are destroyed by removing the tin cans, emptying the barrels, draining the pools and cleaning the streams, the mosquitoes will not be able to breed. Likewise, during the day the mosquitoes rest in deep weeds, under logs, in hollow trees and in other places protected from the sun. But cutting down the weeds, removing old piles of timber and allowing sunlight free play, mosquitoes may be driven away.

The work necessary for the control of malaria consists, therefore, in removing breeding and resting places. This is done by draining such pools and swamps as will hold water more than a week or in so cleaning these pools and swamps that there are no places where the larvae may hide from the minnows and other small fish which feed on them. In fact, fish are among the most efficient allies in the fight against the mosquito and fish control is often the easiest, at times the only way.

THREE METHODS OF CONTROL.

Where neither draining nor fish control is practicable, it has been found that the application of a thin film of oil to the surface of the water will destroy the wrigglers and tumblers by clogging their breathing tubes. We have, then, three main ways to get rid of the mosquito: By draining away the water, by allowing the fish to get at the larvae and pupae, and by oiling.

Plans for the work at and around Camp Bowie provided for all three methods. It was planned to clean the banks of both forks of the Trinity River near the city and the camp, thus eliminating hiding places for the larvae in the grass and brush along the banks and allowing the fish a chance to feed on them. The estimate called for cleaning fifty miles of river bank. Ditching and draining was contemplated for the sloughs and stagnant pools, while the small streams and branches were to be straightened and cleaned. The estimate on ditching called for about fifty miles of this work. Oiling was relied upon to control mosquito production while ditching and river bank cleaning was in progress.

Work was begun in the second week of May with a single foreman and about a dozen men. More men were added as rapidly as possible and the work attacked from various sides. One gang of men—part of the time two—have been kept steadily at work cleaning the river banks and bringing them to a sharp edge free from grass or other obstructions. In connection with this work, the streams have been cleaned of obstructions and drift that might provide shelter for the larvae. To June 20th, approximately 34 miles of this work had been completed.

On the smaller streams which usually offer still more favorable opportunities for breeding than do the larger ones, the character of the work is slightly different. Most of the streams around Camp Bowie are composed of grass or weed-bordered pools, with a more or less steady flow of water between. These grassy edges offer ideal places for the growth of mosquitoes. The method of procedure here has been to lower the pools by connecting ditches, which drains them down so that the mud banks offer no protection from the fish. The channels, where water is flowing, are cleaned and straightened, grass and weeds cut and obstructions removed. This removes the breeding places and at the same time destroys the daytime roosts.

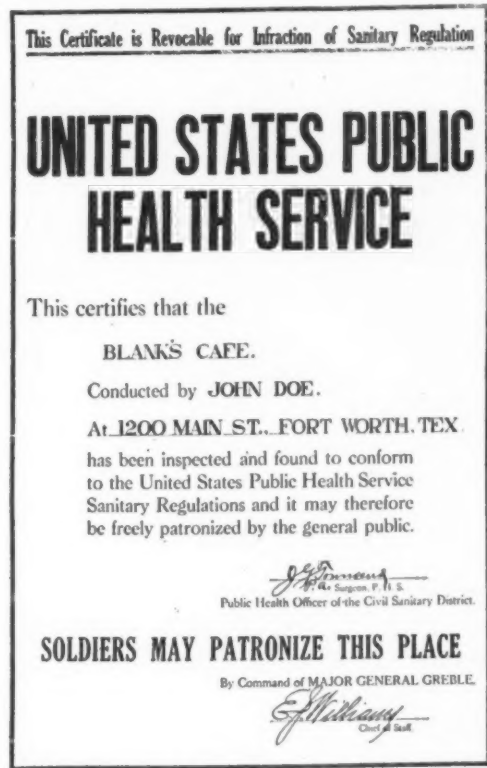
MANY BREEDING PLACES.

In the outskirts of the City of Fort Worth there are quite a number of sloughs or shallow depressions holding water. These have, in the most cases, been caused by borrow pits for road fills, levees and railroads, or by the cutting off of a natural drainage course in levee or similar construction. These are among the most prolific breeding places locally. The general plan has been to drain them, even though this entails considerable work, for several of them are so extensive that control by any other means is doubtful. Moreover, oiling is but a temporary expedient and a comparatively costly one. In Trinity Park addition and along the Stove Foundry Road, where work has been going on for the past two or three weeks, results are beginning to show. To drain these big water holes entailed the construction of nearly a mile of ditch. Pending the complete drainage, oil is being applied.

A great deal depends on the amount and spacing of the rains. Two rains falling within a week are liable to cause water to stand in roadside ditches for a time sufficient to cause breeding. To care for such a contingency, a ditching machine, drawn by six mules, is used to clean out the roadside ditches and remove the grass and weeds. This allows the sun every chance to dry up the water

and also furnishes better drainage facilities than the grass-filled gutter; it also allows of easier and cheaper oiling.

Since work began, ten miles of roadside ditches have been cleaned by machine and twenty-four miles of ditches completed by hand methods. At the present time five



CITIZENS ARE REQUESTED TO PATRONIZE ONLY THOSE STORES THAT DISPLAY CERTIFICATES SIMILAR TO THE ABOVE.

gangs of men are employed at hand ditching, while another gang operates the ditcher.

USE OIL TEMPORARILY.

Pending the work of cleaning out the streams and draining the pools and sloughs, some method of control is necessary; in many cases it is necessary even after the streams have been ditched and cleaned. Oil is utilized for this work. Ordinary crude oil is used for the most part, mixed in the proportion of two parts of crude oil to one part of coal oil to make the mixture thinner and easier to handle. This may be applied in several ways. The method most in use around Camp Bowie is by the hand spray. A knapsack shaped can, holding about five gallons of oil, is strapped to the back of the oiler. By means of a small pump and a spray nozzle the oil is applied in a thin film to the surface of the water. Oil may also, in the case of running streams, be applied by a drip can regulated to deliver twenty to thirty drops of oil per minute. The oil forms a film on the surface of the water and by shutting off the air supply of the baby mosquitoes, kills them in a short time.

At the present time one gang of men devotes its entire time to mixing and applying the oil. At present about 500 gallons are being used weekly. The entire force engaged in anti-malarial operations comprises about 75 men, working in eight gangs. Already more than 50 per cent of the work is completed.

At the three aviation fields, practically all the work is finished. In the vicinity of Camp Bowie, work is well along and plans are now being considered to commence operations at Lake Worth.

The WEEK'S NEWS

Work Starts When \$5,000,000 Indiana Road Funds Are Released—West Virginia's War-Time Road Plans—Infantile Paralysis in Dubuque—New Kentucky Health Board Restrained from Action—Fuel Administration's Program for Power Plant Economy—Detroit's New Police Chief—Fire Prevention in Indianapolis—New Local Capital Issues Committee Appointed—Manager Ashburner Goes to Norfolk.

ROADS AND PAVEMENTS

\$5,000,000 County Construction Funds Released; Start Work.

Indianapolis, Ind.—In order to remedy conditions, which are existing in many places throughout the state, Gilbert H. Hendren, state examiner of the state board of accounts, has written a letter to all county auditors, boards of county commissioners and county attorneys in Indiana, releasing funds for road-building and bridge building, where bonds have been sold for such work, and contracts let, but construction held up because of inability of the contractors to obtain the exact sort of material specified in the contracts. The release, which is to be used only on the approval of county authorities, would result in the beginning of work on approximately \$5,000,000 of Indiana roads and bridges, Mr. Hendren said. Lack of transportation facilities and the wartime moving of freight of the classes in use by the government, have made it impossible to obtain certain materials in certain localities, that are used for building roads and bridges. Heretofore such work has been held up when it was impossible to obtain the material specified and the state board of accounts has held rigidly to the legal ground that roads and bridges should not be built of other than specified materials. The war emergencies, however, particularly the need of the Indiana farmer just now for good roads to haul his crops to market, has impelled the state council of defense, the Governor, the auditor of state and other officials, Mr. Hendren says, to decide that roads and bridges should be constructed out of available material, where the bonds already have been sold and the contracts let. Safeguards of several kinds are thrown about the releasing of former legal restrictions in such road and bridge construction in the letter, and a paragraph of it reiterates the fact that no new bonds shall be sold in competition with Liberty bonds "unless there is an indispensable public necessity therefor." The letter says in part:

"There is no authority of law to change plans and specifications nor for making an allowance for extra work after a contract has been let under the three-mile gravel road law. This ruling has been sustained by our higher courts, but owing to abnormal conditions, due to the war, it is in many instances impossible for contractors to secure shipments of material specified within a reasonable time, and this necessitates a change of material or the work will stop. If a change of specified material for other suitable and available material becomes a public necessity we will not object to a change as an indispensable public necessity upon the following basis:

"If the contract be for the construction of a crushed stone road, and stone cannot be had and gravel suitable for road building can be substituted, a new estimate may be made by the engineer and viewers who made the original estimate, with the approval of the board of county commissioners and the county attorney, based on the price of gravel at the time the original contract was awarded, and deduct from the contract price the difference between the cost of gravel and the cost of stone. If gravel is specified and cannot be had, and stone is substituted the same method should be used.

"If a change be necessary in the construction of a steel or concrete bridge on such roads, if concrete is specified and the material needed can not be had and steel can be substituted, a new estimate should be made with the approval of the board of county commissioners and the county attorney, based upon the price of steel at the time the original contract was let, and settlement made upon a basis of prices at that time; or if steel is specified and can not be had and concrete is substituted, the same method should be used.

"When any substitutions of materials have been agreed upon, as aforesaid, by the original viewers and engineer, before the same are finally approved by the board of county commissioners and county attorney, the amended plans and specifications for comparison on the basis herein must be sent to this department for inspection by a competent civil engineer of the faculty of Purdue university.

"You understand these changes are suggested only when bonds have been sold and the money is in the treasury and work has not been commenced for the reasons above men-

tioned, or where work has been commenced and only partly completed. This is an emergency proposition on account of abnormal business conditions due to the war.

"There has been an advance in prices of material and labor since contracts were awarded, and contractors may insist upon the new estimates being based upon current prices, but that would be unfair to the taxpayers and will not be approved.

"The government has issued orders that the farmer must prepare to store a large part of his wheat on account of a scarcity of cars. He will, therefore, be expected to market his wheat to suit the convenience of the government, regardless of the condition of the roads. This makes it imperative that all bridges and gravel and crushed stone roads be completed at the earliest day possible. This will not only aid the farmer to market his wheat and other products when needed by the government, but the material used in the construction of such roads and bridges will greatly aid the cause of labor in the construction thereof, and create a market for such materials as are suitable and available.

"The total amount of construction funds on hand in the different county treasuries of the state where bonds have been sold and work commenced, or only partly completed, will amount, in the aggregate, to more than \$5,000,000. A large part of this money can not be used for the reason that the specific material named in the specifications is not available on account of government orders as to cars affecting the transportation of such material.

"The bonds sold to make the abovementioned improvements bear interest at not less than 4½ per cent and the county is only receiving 2 per cent interest on the unexpended balance, thereby losing at least 2½ per cent interest.

"Good roads for the farmer to deliver his grain and stock to market to meet the government's demands and for other traffic essential for war purposes will be a factor in winning this war, and not only for that reason should the unfinished roads be completed, but also for the amount of money saved in interest.

"From the plan suggested, you will observe that the taxpayers have the same protection under the same officials as under the original procedure, and the proposition is wholly up to your local officials for approval. Some person not in sympathy with the war may file an injunction to prevent the county auditor from issuing a warrant, but, in that event, the auditor would have the benefit of the court's order before issuing the warrant. If no injunction is filed and the taxpayers get value received for the money expended by reason of the plan suggested, and thereafter suit should be filed, no court on earth would ever render judgment against any official connected therewith on account of technical irregularities, when the official had not profited 1 cent, but the people were the beneficiaries, under the abnormal conditions due to the war. If, through this proposed change, any injury or damage results to the public, the responsibility therefor will be due to the negligence of the officers authorizing the change, who have been chosen by the people to represent them.

"By reason of the rule proclaimed by the national and state councils of defense, no new improvement bonds should be sold in competition with Liberty loan bonds unless there is an indispensable public necessity therefor, and such bonds must have the approval of the state council of defense."

Contractors Released Because of Freight Rates.

Middletown, O.—Owing to the recent increase in freight rates, Bigler Brothers, contractors, requested that the county commissioners release them from a contract into which they entered to pave the new viaduct connecting this city with West Middletown, half mile in length. The contractors were released and the commissioners now state that the viaduct will not be paved this year. This is the principal entrance to the city from all parts of the county west of here.

War-Time Road Policy of West Virginia.

Charleston, W. Va.—It is the opinion of the state road commission that road construction work in West Virginia should not be slackened, but pushed ahead with all the speed possible with the labor that may be secured for that purpose. In a letter to county engineers commissioner Scanlon declares "there is work enough on the roads in every county in the state without the necessity for much transportation or the use of bitumen either. It is going to be the policy of the commission," he said, "to try to get all the Class A roads in each county properly surveyed,

and spend the money and labor in making good roads, including good alignment, good grading and good drainage. In that way we can make the roads through the counties, though still dirt roads, passable practically all the year round, and as things begin to get normal they can be more easily hard-surfaced."

Close Boulevard to Traffic to Save Wear.

Philadelphia, Pa.—All truck traffic on the Northeast Boulevard is to be compelled to use the side service driveways instead of the central driveway, according to an announcement by director Datesman, who has promised to co-operate with the police in the innovation "as a war economy and to preserve a great public improvement." Traffic over the boulevard has been particularly heavy since the development of the truck transportation system, it was said. With its avenues and connection with Welsh road the boulevard furnishes the principal exit for truck traffic to New York. The result is that its capacities are greatly taxed. The central driveway is the widest of the three on the boulevard and therefore the most popular with truck drivers. To keep it in repair would be a constant drain on the city's treasury.

SEWERAGE AND SANITATION

Infantile Paralysis Epidemic Grows Serious.

Dubuque, Ia.—With seven deaths in one week, more than a dozen cases reported in one day and a total number of cases approaching fifty, Dubuque faces a serious epidemic of infantile paralysis that will call for stringent measures to eradicate. Realizing the gravity of the situation, mayor James Saul, as chairman of the Dubuque board of health, telegraphed to the state board asking that an expert be sent here immediately to investigate the situation. A meeting of Dubuque physicians was called by the city board of health and the situation was gone over thoroughly. Dr. Rosenow, of Rochester, Minn., expert on the disease, has come here, bringing full laboratory equipment and means for using his serum. City health officials have ordered physicians to make reports of cases within twenty-four hours as the first step in the campaign to eradicate the disease. Strict sanitary rules will be enforced also. A campaign against flies has been instituted and citizens are being urged to take every precaution. Nine cases were reported at Bellevue, 30 miles south of Dubuque. The disease is believed to have been carried there by a church steamboat excursion from here the previous week. Several hundred children were on board the boat. All Sunday schools, theatres and playgrounds in Dubuque are closed and children are barred from riding on street cars.

New State Health Board Cannot Act.

Frankfort, Ky.—Circuit judge Stout granted a temporary injunction restraining the new members of the state board of health from assuming the duties of their office a week after their appointment by Governor Stanley. Dr. J. N. McCormack, secretary of the old state board of health, secured a restraining order in the Franklin circuit court restraining the new members of the board from taking up the duties of their office. The case will be taken to the Court of Appeals and in the meantime the old board will remain in office. The injunction was granted because judge Stout held that the new law is unconstitutional. He held it to be invalid because the title to the new law does not contain references to certain provisions of the act, which judge Stout said violated Section 51 of the Constitution. He held that when the title to an act relates to certain subjects then the body of the bill is restricted to those subjects. Dr. McCormack claimed that the new act not only violated Section 51 of the Constitution in that it contained matter in the body of the bill not referred to in the title, but that it left the question and limit of salary for the secretary of the board to the board. He insisted, too, that the new law did not prescribe any qualifications for the new members, and that in one part of the bill it provides that ten members shall constitute the board, and

in another place that the board shall be composed of eleven members and stating how they shall be appointed. The main issue in the case, however, is laid to the fact that the title to the bill does not refer to provisions in the body of the bill. Dr. J. N. McCormack has been secretary of the board for thirty years, excepting during the period when his son, A. T. McCormack, was acting. The new board organized as soon as it was appointed and elected Dr. A. D. Willmoth, of Louisville, president; Dr. C. L. Wheeler, Lexington, vice-president, and Dr. W. L. Heizer, secretary and tenth member of the board. Dr. C. A. Fish, homeopath, of Frankfort, Dr. H. H. Carter, osteopath, Shelbyville; Dr. J. T. Fuller, eclectic, of Mayfield, and Dr. R. F. Furnish, allopath, of Covington, are the members of the old board retained under the provision, requiring the re-appointment of four, representing the four schools of medicine. O. C. Dilly, of Louisville, is the druggist representative, and Dr. E. H. Maggard, of Wayland, former physician at the reformatory; Dr. Willmoth, Dr. Wheeler and Dr. J. D. Williams, of Ashland, are the new members. Dr. Heizer was registrar of vital statistics under the state board of health, and for the last year has been secretary of the State Tuberculosis Commission, which with the hotel inspector's department and pure food and drugs bureau are merged into the state board of health. The laboratory in the future will be at the State College, Lexington. The board did not decide upon its headquarters.

WATER SUPPLY

Water Works Employees Quit—City Faces Famine.

East Liverpool, O.—A water famine was threatened here as a result of a walkout of eleven employees of the municipal filtration plant following the refusal of city council to grant their demands for a wage increase. The water supply in the reservoirs was at a low point and no pumps were operated.

City Furnishes Water for Camp.

Charlotte, N. C.—Contract for from 365,000,000 and 730,000,000 gallons of water for Camp Greene has been entered into between the city commissioners and the camp quartermaster, the contract under which the city furnishes water for the camp having been renewed for a period of one year on a basis of seven cents the 1,000 gallons. The contract stipulates that a minimum of 1,000,000 gallons and a maximum of 2,000,000 gallons a day must be available.

New Rate Ordered for Water Company.

Harrisburg, Pa.—The state public service commission has served the Springfield Water Company, which supplies the communities surrounding Philadelphia with water, with its latest order on rates, modifying an order decreasing rates approximately 33½ per cent issued last February. Among the communities served by the company are Cheltenham, Wayne, St. Davids, Colwyn, Swarthmore, Ardmore, Hillside, Narberth, Glenside, Bryn Mawr, Rosemont and Rockledge, the township of Tinicum and the boroughs of Morton, Clifton Heights, Darby, Eddystone and Glenolden. The system of the company extends into Montgomery, Delaware and Chester counties. When the reduction was ordered early in the year, the company applied for a rehearing and for a modification of the order. The commission took into consideration the increased cost of material since the original investigation. The first order fixed the fair value of the water company at \$6,958,320, but the order just issued raises this to \$7,203,320 on October 1, 1917. The latest order is a modification of the February order, made to conform to the new valuation. The order, as it relates to improvements to be made during the next three years and the expenditure of \$1,048,100 during the present year, was not changed. The figures reached originally and under the new order allow the company a return on its investment of 7 per cent. These permit the company, under both orders, to collect \$560,099, together with operating expenses of \$262,500 and an allowance for depreciation of \$59,633 for 1918. The new order, like the former,

allows the company to make such rates as will permit it to receive for fire service \$180,130 annually, but such domestic and industrial rates may be fixed as to allow it to receive \$17,500 more under the new order than under the original one. The February order allowed the company \$702,102 for these services. No change is made on the minimum charges, which are based on the size of the meter and run from \$12 a year for a five-eighth inch meter to \$300 a month for four-inch meters. The new order makes no change in the additional facilities to be installed this year, including a pump at Pickering Creek, new feeders at Oak Lane, extensions of lines and other improvements ordered last February. No change is made in the improvements ordered during 1919 and 1920. Under the meter schedule, it is ordered that output service in excess of 30,000 gallons and up to 500,000 gallons shall be charged at the rate of twenty-one cents per 1,000 gallons, under the former order, but the new modification reads twenty-three cents per 1,000. The commission directs no other changes in other metered hydrant or pipe service.

STREET LIGHTING AND POWER

Gas Plant Bureau for Fuel Administration.

Washington, D. C.—Announcement has been made by United States Fuel Administrator H. A. Garfield of the appointment of James T. Lind, of Detroit, Mich., as director of the bureau of gas plants in the Fuel Administration. This is a newly created branch of the Fuel Administration which will have supervision of the regulation of the artificial gas industry, in so far as it affects the consumption of fuel. Mr. Lind has for a number of years been the president of the National Commercial Gas Association. He has wide experience in the business, having been associated with the industry on both technical and commercial sides since 1880. He is thoroughly familiar with every branch of the business, and is widely known and generally recognized as an authority upon subjects relative thereto. He recently retired from active business pursuits, but freely consented to renew his activities to respond to the call of the Government.

Federal Plans for Power Plant Efficiency.

Washington, D. C.—Further details of the national plans for fuel economy in power plants have been formulated following recent conferences of state administrative engineers of the United States Fuel Administration and their committees for the group of states which together consume about 70 per cent of all coal used in the United States, exclusive of railroads. The plan has been endorsed of all of these states, as well as by the United States Bureau of Mines and the committee of consulting engineers on conservation and publicity, which represents the Engineering Council of the four national engineering societies. It is considered important that all existing fuel conservation committees, committees of chambers of commerce and national defense, manufacturers' associations and other bodies be continued in full force, and that the co-operation of such organizations be obtained. The administrative engineer in each state will work under the supervision of the present federal administrator. No separate or new organization is contemplated, but sufficient addition to the working force in each state will be made to insure efficient execution of the new function. The ratings of plants will be based upon recorded answers to questions, each of which will be given a value depending upon its relative importance to the other questions. Depending upon the efficiency of methods in use in any plant, it may be rated in Class 1, 2, 3 or 4. The administrative engineer in each state will have supervision of electrical and mechanical problems connected with fuel conservation activities contemplated under this plan. Before the first inspection a questionnaire is being sent to every power plant in each district, with notice to the owner that within, say, sixty days his plant will be inspected personally and the questionnaire will be checked up by the inspector upon his visit. This action will give a reasonable time to any plant owner to improve the

operation of his plant and conform to recommendations before his plant is actually rated. Thus, when the inspector calls for the purpose of obtaining and checking up the information form, the plant may receive a much higher rating than would have been the case if no time were allowed between the sending and collecting of the questionnaire. It is recommended that a board of competent engineers be attached to the conservation committee in each state; also a corps of lecturers to arouse public interest and disseminate engineering information. As the work develops, still further constructive assistance is contemplated for helping owners to bring their plants up to a high plane of economic operation.

Ask Municipal Plant to Buy Current.

Marblehead, Mass.—The city's electric lighting plant has been requested by the New England Fuel Administration, of which James J. Storrow of Boston is the head, to consider the policy of purchasing electrical energy from adjacent central stations as a means of saving fuel. The Marblehead authorities have acquiesced, and asked the Lynn Gas & Electric Company and the Salem Electric Lighting Company to submit figures as to the supply of energy to the town system. It appears that neither the Lynn nor the Salem company is seeking to acquire the Marblehead plant or distribution system, and it is probable that if a satisfactory arrangement for the purchase of electricity is made the financing of the necessary line will have to be handled as a war measure, looking toward the conservation of coal. The peak load at Marblehead is less than 500 kw.

Gas Rate Raised.

Milford, Mass.—The state gas and electric light commission has fixed the price of gas in Milford and Hopedale at \$1.67 net per thousand cubic feet. Price is fixed on petition of the Milford Gaslight Company which recently asked the commission for the privilege to raise the rate here, because of increases in the costs of labor, materials and other essentials of maintenance. The commission says: "When the board considered the question of price in 1915 there seemed to have been a reasonable ground to believe that the company's business might be substantially increased. At the hearing of this petition, it appears that this effort has been made but with disappointing results. In consequence, the company must meet the present abnormal cost of the material essential for making gas without any offsetting improvement in its other costs due to a larger output. In view of all the circumstances, the board is of the opinion that the price hereinafter named will give a proper measure of relief. Should experience demonstrate that a change is necessary in this price, to do justice either to the consumer or the company, a modification or this order will be made. The former price was \$1.45 per thousand cubic feet." The new order becomes effective at once. At the hearing in Milford both towns protested against the higher charges.

FIRE AND POLICE

Man From Ranks Succeeds Millionaire Chief.

Detroit, Mich.—For the first time in its history Detroit's police department is to have "a policeman for a policeman's job," Ernest A. Marquardt, appointed to the position of police commissioner by mayor Oscar B. Marx, taking the place of James Couzens, formerly connected with the Ford company, and a millionaire, who has resigned. Simultaneously William P. Rutledge became superintendent of police. The new appointees will serve until January 1, when the new mayor takes office. Although the new charter, now operative, calls for a commissioner and three deputies, the evident intention of the mayor to finish the year under the old arrangement is considered a wise move by officers of the department. It is pointed out it will not in the slightest disarrange the force, while if the terms of the new charter were enforced now it would mean the promotion of three men and their possible demotion under the new mayor's regime. Commissioner Marquardt was

appointed to the force as a patrolman April 26, 1883. June 20, 1887, he was promoted to sergeant; he was made a lieutenant June 1, 1897; a captain, June 3, 1905; January 1, 1915, he was made inspector, and September 15, 1915, appointed superintendent. Superintendent Rutledge went to the force as a patrolman July 16, 1895. He was made a sergeant April 30, 1904; a lieutenant November 14, 1907; captain, July 1, 1912; inspector, January 1, 1913, and chief inspector January 1, 1917. Former commissioner Couzens has announced his intention to run for the mayoralty under the new charter. His regime was a stormy one and he was "fired" a few times by the acting mayor while mayor Marx was out of town.

Court Decision Forces Two Platoons.

Everett, Wash.—The city will have to establish the two-platoon system in its fire department at once, the supreme court having decided to affirm an order issued by the Snohomish county superior court. The order directs the Everett city council to comply with the two-platoon ordinance, which was adopted by the voters at the last election. In defense the council alleged that no provisions for an increase in the fire fighting force was made in the budget and there are no funds in the city treasury for the additional firemen. The supreme court holds that the council did not make any showing that the ordinance is unreasonable. Edward Taro took the case into court when the Everett council refused to follow the ordinance plan.

Organize Fire Prevention Work.

Indianapolis, Ind.—City council has organized fire prevention activities by passing the fire prevention ordinance. The fire prevention bureau will be operated as a division of the city building commissioner's department. The head of the bureau will be known as the director of fire prevention. His salary will be \$2,700 a year. Assistant inspectors, who will be city firemen, and detailed to the bureau by the chief of the fire department, will be known as fire prevention inspectors. Under the provisions of the ordinance the bureau will take effective steps to reduce fire hazards. Special provisions apply to the operation of film exchanges, motion picture theaters, dry cleaning establishments, and garages. One of the most difficult situations was met when council decided not to assume the responsibility of permitting a motion picture film exchange to be operated in the same building where there is a theater or assembly hall. The provisions of the ordinance under which film exchanges will not be permitted in any building where there is a public assembly hall strikes at conditions which resulted in the death of six persons in the Colfax fire in April, 1917. A firm which cleaned motion picture films had its workshop in the basement of the Colfax building, and the fire started among the films.

Chief and Firemen Injured in Factory Blaze.

Cincinnati, O.—Fire chief Barney Houston and two firemen were injured in a fire that almost completely wiped out the big plant of the Hickory Carriage Company. Chief Houston was injured in the fall of a platform on which he was standing in the thick of the fight directing his men. The two men were overcome by smoke and heat almost an hour before the accident to chief Houston. The fire which swept the carriage manufacturing plant from end to end started in the varnish room in the basement of the building. About three months ago the plant was damaged by a fire which started in the finishing section of the wood-working department. At that time, however, the fire department, by extraordinary exertions, saved the main plant. The last fire, however, got too much headway and, although chief Houston and his men put up a hard battle with the flames, they got beyond control and engulfed the entire plant. Within an hour the fire had worked its way to the top of the building and burst through the roof, making a big torch which illuminated the entire western part of the city for several hours and attracted thousands of spectators to the immediate vicinity and the crests of the western hills. A half an hour earlier, when it was seen that the entire plant probably would be swept by the flames, several hundred head of sheep in

Cincinnati Union Stockyards, almost adjoining on the north and west of the doomed building, were taken to safety. The carriage plant was a large structure, 200 feet by nearly 300 feet. On one frontage it was two stories in height and in the back the building was three stories high.

Big Loss in Shipyard Fire.

Orange, Tex.—A difficult blaze in this small city, twenty miles east of Beaumont, left one of its shipyards in ruins, entailing a loss of nearly \$1,000,000. Two men died in the flames. The bodies were recovered shortly after the fire had subsided that destroyed three large schooners, valued at about \$325,000 each, belonging to the Orange Maritime Corporation. These two occupied space in an upper story of the ship shed because of their inability to find accommodations. The fire was discovered about 3 o'clock in the morning in a shed, and, fanned by a light breeze, the flames swept across the yard, igniting the supports of the three vessels, all nearing completion. Within a few minutes the ships tumbled over into a burning mass. The fire hose installed at the yard was out of commission from the heat before anyone could reach it. It was some time before equipment could be transported across the river from Orange. The adjoining yard belongs to the International Shipbuilding corporation, in which about twenty vessels were under construction. It was saved by the fire department, which centered all its efforts to prevent the spread of the flames.

GOVERNMENT AND FINANCE

New Capital Issues Committees.

Washington, D. C.—The Capital Issues Committee of the War Finance Corporation has made a permanent plan of organization of the district committees in each of the Federal Reserve District. Each district committee will comprise fifteen members selected from bankers and business men in the district. This reorganization takes the place of the temporary committees that have been serving since February. The appointments to these committees have been made with regard to geographical and business interests in each district. The chairman of the Federal Reserve Board in each district will act as chairman and the Governor of the Federal Reserve Bank will act as vice-chairman. An executive committee of not more than seven members residing conveniently near the Federal Reserve city will meet regularly to pass on applications for issues of capital stock investment, referred to the District Committee by the Capital Issues Committee in Washington. Charles S. Hamlin of the Federal Reserve Board and chairman of the Capital Issues Committee of the War Finance Corporation, in making the announcement of the district committee organization said that there had been a wide range of applications coming from every line of industry as well as from public utilities and municipal corporations. All parts of the country are represented in the applications on file with the committee. "Since the Capital Issues Committee was reorganized in May in conformity with the act of Congress creating it," said Mr. Hamlin, "hundreds of applications from both public and private corporations have been acted upon. With the help of the old district sub-committees, the issuance and sale of millions of dollars of securities for purposes regarded as not contributing to the prosecution of the war have been postponed for the period of the war. Issues which meet a real military or economic necessity have been encouraged. The effectiveness of the war program depends not only upon the nation's military strength, but upon a sound economic readjustment on a basis of war business first—a readjustment that will release workers and raw materials for war industries by curtailing unessential operations. The object of the Capital Issues Committee in passing upon all issues of new securities to determine their compatibility with the national interest is to secure the postponement until after the war of the use of capital, materials, and labor in order to give the right of way to the Government's financial requirements and to the production of war necessities. The dis-

strict committees whose appointments are announced will hereafter act definitely upon all applications to issue securities amounting to \$100,000 or less, and in advisory capacity to the main committee at Washington in the matter of applications involving larger amounts. The Capital Issues Committee also has the benefit of the advice of all other departments and branches of the Government, including the Food, Fuel, and Railway Administrations, the War Industries Board and other agencies having knowledge of the requirements of essential war industries."

New York, N. Y.—The new district committee of the Capital Issues Committee of the War Finance Corporation in New York has been announced as follows: Pierre Jay, chairman, Federal Reserve Agent, Federal Reserve District No. 2, New York; Benj. Strong, vice-chairman, Governor Federal Reserve Bank, New York City; Frederick Strauss, vice-chairman, J. & W. Seligman & Co.; Franklin Q. Brown, Redmond & Co.; John R. Morron, president Atlas Portland Cement company; Charles A. Stone, president American International Corporation; Martin Vogel, assistant treasurer United States Sub-Treasury, New York; S. Reading Bertron, Bertron, Griscom & Co.; Harry Bronner, chairman of Finance Committee, Missouri Pacific Railway company, and director Bethlehem Steel Corporation; Newcomb Carlton, president Western Union Telegraph company; George B. Cortelyou, president Consolidated Gas company; Allen B. Forbes, Harris, Forbes & Co.; W. T. Graham, president Goldschmidt Detinning company; George E. Hardy, Hodenpyl, Hardy & Co.; Alvin W. French, president Equitable Trust company; Thomas W. La Mont, J. P. Morgan & Co.; E. G. Merrill, president Union Trust company; E. H. Outerbridge, president Chamber of Commerce, State of New York; Charles V. Rich, executive manager National City Bank; Walter T. Rosen, Ladenburgh, Thalman & Co.; Charles H. Sabin, president Guaranty Trust company; W. L. Saunders, chairman board of directors, Ingersoll-Rand company; Arthur Sinclair, Jr., Estabrook & Co.; Henry R. Towne, chairman board of directors, Yale & Towne Manufacturing company; James N. Wallace, president Central Union Trust company; Albert H. Wiggin, president Chase National Bank; Walter Cooke, Kenefick, Cooke, Mitchell & Haase, Buffalo.

Mayorality Recount Finally Decided.

Mt. Vernon, N. Y.—The Fiske-Brush quo warranto trial in which Dr. Edward F. Brush had to defend his right to the office of mayor of Mount Vernon, after a month's hearing of testimony, was decided by the jury in favor of mayor Edward F. Brush, making his majority 39. After the election last November the Board of Elections gave a certificate of election to Dr. Brush on a plurality of seven votes. Then this proceeding was begun. It was shown that seals were put on the boxes and on January 22 they were removed to the station house. Some of the seals were broken when removal took place. The boxes had been kept in a public place while in the city hall, with people passing in and out. The Brush side did not charge city clerk Collins with tampering with the boxes, nor Mr. Fiske that Mr. Denton, the new city clerk, did. All the officials had keys and they knew that the boxes were there. There was no evidence of any interference with these boxes. Yet some of the election inspectors said the ballots shown them are not now in the same condition as they were on election night. Fiske said the boxes were tampered with and Brush denied it.

Ashburner Manager of Norfolk.

Norfolk, Va.—Charles E. Ashburner has been appointed city manager of Norfolk and will take up his duties here on September 1. His salary will be \$9,000 per year. The new city council unanimously elected Mr. Ashburner for a term of one year. Mr. Ashburner has been city manager of the city of Springfield, Ohio, since 1914 and, in the opinion of the members of the city commission of that city, has made good. Mr. Ashburner's salary in Springfield was \$6,000 a year. Mr. Ashburner faced many obstacles when he became city manager of Springfield, but with the cooperation of the citizens of that place, the city commission, and the employees of the city, he has made Spring-

LEGAL NEWS

A Summary and Notes of Recent Decisions— Rulings of Interest to Municipalities

Incompetent Contractor—Liability of City.

(Tenn.) Municipality was not liable for death caused by fall of a smokestack being erected under contract, where such erection was not necessarily dangerous when done with care by persons having skill, and the municipality did not know the contractor was incompetent and did not control the methods or appliances of the contractor in performing the work.—*Cash v. Casey-Hedges Co.*, 201 S. W. 347.

Sidewalk Defect—Knowledge by City.

(Wash.) Where there was a defective trapdoor in a sidewalk in a dense business district, and the door was smooth and springy, indicating improper construction, and the surface was very smooth, suggesting long use, and the city offered no evidence on the question of notice, the trial court was warranted in imputing to the city knowledge of the defect.—*Peterson v. City of Seattle*, 171 P. 657.

Inadequate Sewer—Damages—Contributory Negligence.

(Wis.) Plaintiff's failure to take any precaution to protect his premises, after knowledge that sewer main was of insufficient capacity, constituted contributory negligence barring recovery against defendant city for damages due to sewer water backing up into plaintiff's basement.—*Hume v. City of Chilton*, 166 N. W. 776.

Use of Park for Sidewalks.

(Tex.Civ.App.) A union depot company owning and operating a station, abutting a regularly dedicated city park on which it has, under agreement with the city, spent thousands of dollars for grading, fencing, and beautifying, is entitled to injunction against appropriation of any part thereof for sidewalk purposes.—*El Paso Union Passenger Depot Co. v. Look*, 201 S. W. 714.

Under El Paso Special Charter, § 54, providing that all parks owned by the city are inalienable, and no part thereof shall ever be devoted to other than park purposes, the appropriation of park grounds for streets or sidewalks will be enjoined.—*Id.*

(Tex.Civ.App.) While the city of El Paso may not delegate its authority and control of public parks to create in a union depot company a vested right to keep and maintain the same and prohibit the city's control and improvement thereof, yet the city may contract for maintenance of park.—*El Paso Union Passenger Depot Co. v. Look*, 201 S. W. 714.

field go forward to such an extent that the city has been transformed. Since he took charge, miles of street paving have been laid, the fire and health departments and all other departments have been motorized, and the water works have been reorganized. The city has installed the cluster light lighting system. Every department has been placed on a business basis. One of the first things Mr. Ashburner did when he assumed charge of the city was to abolish the red light district and require all city employees to abstain from drinking while on duty. During the first two years Springfield's inherited floating debt of \$120,000 was liquidated and the tax rate reduced from \$1.50 to \$1.31. Mr. Ashburner was the first city manager in the country, having been appointed manager of Staunton, Va., in 1908. He was first president of the City Managers' Association and one of the most active in its organization.

Elevator Men Make Aldermen Walk—Get Raise.

Chicago, Ill.—City hall elevator men walked out at a moment calculated to show aldermen on their way to a council meeting what it is to climb stairs. When the aldermen had regained their breath they promptly voted to increase pay of the strikers from \$90 to \$100 a month.

NEWS OF THE SOCIETIES

Aug. 27-29.—LEAGUE OF CITIES OF THIRD CLASS IN PENNSYLVANIA. Nineteenth annual meeting, Erie, Pa. Secretary, Fred. H. Gates, city clerk, Wilkes-Barre, Pa.

Sept. 24-27.—INTERNATIONAL ASSOCIATION OF MUNICIPAL ELECTRICIANS. Annual convention, Atlanta, Ga. Secretary, Clarence R. George, Houston, Tex.

Oct. 2-4.—AMERICAN SOCIETY OF MUNICIPAL IMPROVEMENTS. Annual meeting, Buffalo, N. Y. Secretary, Charles Carroll Brown, 304 E. Walnut St., Bloomington, Ill.

American Society for Testing Materials.

With an attendance exceeding expectations and also that of last year, the American Society for Testing Materials held a very successful convention, marred only by the sad news of the death of the secretary, Prof. Edgar Marburg. The meeting was held at Atlantic City.

Industrial research was considered of such importance that it was made the subject for a special session. The significance of organized action in such research was emphasized strongly by prominent students of materials and testing and by representatives of important industries.

At a special meeting of the executive committee on Wednesday afternoon, favorable action was taken on the question of a proposed American engineering standards committee. In August, 1916 the society had been invited by the American Institute of Electrical Engineers to appoint three representatives on a proposed joint committee consisting of three representatives each from the following five societies: American Society of Civil Engineers, American Society of Mechanical Engineers, American Institute of Mining Engineers, American Institute of Electrical Engineers, and American Society for Testing Materials; to consider ways and means of bringing about co-operation in American engineering standards. This invitation was accepted and this work resulted in the report.

Interesting discussion followed the report of the committee on clay and cement sewer pipe which recommended slight revisions in the present tentative specifications. E. Ashton and W. M. Kinney attacked the committee sharply for declining to eliminate the absorption limits of 5% for clay and 8% for cement tile. The controversy centered about the use of the society's tentative specifications as a standard by the city of Los Angeles. In the vote the cement-tile representatives won the victory, the absorption figures being deleted from the specification.

Water-gas tar treatment of wooden paving blocks was the subject of some discussion when the timber committee reported. In proposing tentative specifications for blocks, the committee omitted clauses for quality of water-gas tar oil, but placed them in an ap-

pendix "for information." Objection was raised in the meeting, and on vote these clauses were inserted as a footnote in the body of the specifications. Other highway matters were dealt with by the committee on road materials. Besides revision of several of its specifications this committee presented (as tentative) a new specification, for tests of apparent specific gravity of fine non-bituminous highway materials. It also recommended that six tentative specifications be advanced to the rank of standard, which course was approved by the meeting.

Changes in wrought-iron specifications were also approved by the meeting. The committee on cast iron recommended increasing the sulphur limit in light gray-iron castings from 0.08% to 0.10%; this was approved, and the committee's tentative soil-pipe specifications were approved as standards, subject to letter ballot.

Season-cracking of brass and bronze parts of the Catskill Aqueduct and in a Minneapolis filter was discussed, as was also the study of causes and search for a cure at the Bureau of Standards and elsewhere. Annealing as well as certain cold-distortion treatments were said to have been found to be remedies.

Progress was recorded by the committee on fireproofing, which during the year succeeded in bringing together all the interested technical societies in the joint preparation of a standard code for the conduct of fire tests and fire-stream tests. Under the new code, fire-protective materials are classified by their time of endurance in the fire test as one-hour protection, etc. The need of recognizing short-time protection, such as lath-and-plaster partitions, resulted in 15-min. and 30-min. protection being recognized in the code. The meeting approved the code for letter ballot on its adoption as standard.

The following new officers were elected: President, G. H. Clamer, of Philadelphia; Vice-President, George S. Webster, of Philadelphia; Members of Executive Committee, G. Aertsen and G. B. Heckel, of Philadelphia, G. K. Burgess, of Washington, and K. W. Zimmerschied, of Detroit.

American Institute of Electrical Engineers

War problems again and again entered the discussions at the thirty-fourth annual meeting of the American Institute of Electrical Engineers held June 26-28 at Atlantic City, N. J. The meeting consisted of six technical sessions and an informal reception and dance on the evening of the first day and luncheon-conferences of Institute officers and section and branch delegates each day. President Rice called the first meeting to order at 10.30 a. m. on Wednesday with about approximately 250 delegates present. Presi-

dent E. W. Rice, jr., made a stirring and enthusiastically applauded address, in which he said that the engineer is the hope of the nation, not only now, during war, but even more so in the future—in the days of reconstruction following peace. He pointed out the progress of electrical science, the increasing efficiency of machinery and outlined the methods for further efficiency, especially in view of the tremendous needs of the war. Comfort A. Adams, president-elect, was then introduced, and in a brief address pointed out that the future activities of the Institute should be extended and readjusted and its vision perhaps widened following our winning of the war.

The session on Wednesday afternoon was devoted to papers dealing with transmission and distribution problems, of which there were three: "Split-Conductor Cables—Balanced Protection," by William H. Cole, of the Edison Electric Illuminating Company of Boston; "Aerial Cable Construction for Electric Power Transmission," by E. B. Meyer, of the Public Service Electric Company, Newark, N. J., and "The Application of Theory and Practice to the Design of Transmission Line Insulators," by G. I. Gilchrest, Pittsburgh, Pa.

On Thursday the subject of the session was protective devices, on which four papers were presented. The Thursday afternoon session was devoted to two subjects which have been made prominent on account of the war; the fixation of nitrogen from the atmosphere and the conservation of fuel by means of the utilization of water power.

An address was made by C. E. Stuart, representing U. S. Fuel Administration, who made a plea for the conservation of fuel and its efficient use. He outlined the plans which have been instituted for this purpose, including interconnection of plants and shutting down inefficient isolated plants.

War-time subjects were the feature of the Thursday evening session, the principal address being one on "Engineers and the War," by General William M. Black, chief of engineers, U. S. A., who gave examples of the service of engineering in the war. Motion pictures of military engineering activities were then shown.

E. Kilburn Scott discussed "Electric Power for Nitrogen Fixation." The direct and indirect methods were discussed. He gave a diagram showing the layout of a battery of by-product coke ovens with an electric power house worked by the surplus gas and a nitrate from air plant to use the electricity. Figures were given showing that the nitric acid made by such a plant is about the right amount to combine with the ammonia to form ammonium nitrate, a compound in great demand at the present time for explosives.

Dr. C. P. Steinmetz presented a paper on "America's Energy Supply."

(Continued on page 62.)

INDUSTRIAL NEWS

Cast Iron Pipe.—The labor situation is giving pipe manufacturers trouble. Government prices are being quoted as follows. Quotations: Chicago: 4-inch, \$65.05; 6-inch and larger, \$62.05; Class A \$1 extra. Birmingham: 4-inch, \$58; 6-inch and larger, \$55; Class A \$1 extra. New York: 4-inch, \$64.75; 6-inch and larger, \$61.75; Class A \$1 extra.

Brick Products for Civilian Needs.

The War Industries Board has given out the following statement:

Representatives of approximately 15 of the 18 zones into which the 7,000 manufacturers of the fire brick, paving brick, and common brick have divided in the United States, met with the Priorities Commissioner and other representatives of the War Industries Board and outlined the following industrial conditions and agreements:

(1) That, with the exception of the zones in the district north of the Potomac River and east of the Allegheny Mountains, including New England and the zone which includes the Birmingham district, the shortages in coal and disturbances in deliveries have not been sufficiently serious, generally speaking, to disturb manufacturing.

(2) In the greater number of the zones manufactured output was materially less in 1917 than in 1916, and materially less during the first six months of 1918 than during the first six months of 1916. This result was attributed in part to diminishing demand for general peace-time uses and in part to labor shortage, which in many zones have been quite noticeable.

(3) The necessity of curtailing all uses which could be deferred without interference with the war program or are vitally essential for the civilian welfare was unanimously recognized as being unavoidable. The manufacturers present pledged themselves to exercise such oversight of the uses to which their products were to be put as to guard against its being consumed in any deferrable uses.

(4) The priorities commissioner undertook to give applications of individual brick manufacturers for places on the preference list favorable consideration, upon condition that such individuals and the industry would devote their output to vital war needs, direct and indirect, and to indispensable and nondeferable uses.

The E. I. du Pont de Nemours Co., Wilmington, Del., recently held an employes sales convention which was marked by a most illuminating story of achievement. Col. E. G. Buckner, vice-president in charge of military sales, showed the company's foresight in preparing for America's participation in the war and its immediate readiness to supply all the government demands for explosives and other necessary products. One of the most interesting sets of figures he gave was

that showing how prices for explosives were scaled down month by month until now they are lower than before the war—in spite of the fact that the cost of labor and of everything else that enters into the making of munitions has increased enormously.

He said: "Since 1914, raw materials for the manufacture of one pound of powder had increased 18 cents. The government's plants were not able at that time to produce powder for 53 cents. To sum up: 115 million pounds wanted; duPont the only source; a statute fixing the price at 53 cents; raw materials increased 18 cents. Under the same influence, steel, coal, cotton, lumber, wheat, alcohol, gasoline, everything has increased 100 to 150 per cent over pre-war prices. But when duPont confronted the fact that its services were needed to help fight this war, our price did not go up, but at once went down to 47½ cents. duPont company enjoys the unique position of being the only concern in the United States which is today selling its product at less than pre-war prices. Had we consented to sell at any price we could get, powder, like coal, steel, lumber, alcohol, copper and cotton would have advanced to exorbitant prices and the government would have had to fix the price as it has done in other cases, but none of you has ever heard of the government fixing a price on powder since 1913. duPont, as far as it could do so, has of its own volition reduced the price."

Wallace & Tiernan Co., Inc., 137 Centre street, New York City, which manufactures the widely-used chlorine control apparatus for water and sewage purification, announces an important addition of prestige to its already high grade engineering staff. Chester W. Wigley, well-known as a sanitary engineer, has resigned as chief of the bureau of engineering of the New Jersey state department of health and became associated with the Wallace & Tiernan staff.

NEWS OF THE SOCIETIES

(Continued from page 61.)

This was discussed by A. M. Schoen, of Atlanta, Ga., and B. E. Behrend, of Boston, Mass. Mr. Schoen urged the present development of the water powers of the Southern Appalachians, and Mr. Behrend pointed out the difficulties of distributing and using the heat, if all fuel were first applied to the development of power. In replying, Dr. Steinmetz said that heat should be developed where needed and the power simultaneously developed should be collected and distributed in the form of electric power.

The Friday morning session was largely taken up with the discussion of a paper by C. L. Fortescue entitled, "Method of Symmetrical Co-ordinates Applied to the Solution of Polyphase Networks," which was considered by all present as an exceedingly valuable and epoch-making presentation.

V. Karapetoff read a paper on "Pre-charged Condensers in Series and in Parallel."

The last paper of the session, dealing with "Sustained Short-Circuit Phenomena and Flux Distribution of Salient-Pole Alternators," by N. S. Diamant, was presented by C. M. Davis.

The last session of the convention was devoted to the presentation of the following papers: "Reactance of Synchronous Machines and Its Application," by R. E. Doherty and O. E. Shirley; "Protection from Flashing for Direct-Current Apparatus," by J. J. Linebaugh and J. L. Burnham, and "The Automatic Hydroelectric Plant," by J. M. Drabelle and L. B. Bonnett.

Pennsylvania Housing and Town-Planning Conference.

The fourth annual Pennsylvania Housing and Town-Planning Conference was held recently at Johnstown. A large number of important papers were read.

At the opening session, Miss Hannah Fox of Philadelphia, president, turned the meeting over to Secretary John Ihlder of Philadelphia. Andrew Wright Crawford submitted a report of the Philadelphia Chapter of the American Institute of Architects. The report suggested that all through traffic on the New York, Trenton, Chester, Wilmington and Baltimore line of highways would traverse the proposed distributing center, while the great diagonal highways connecting Bethlehem and Wilmington, Reading and Trenton and Coatesville and Trenton should be made to meet near Conshohocken on the left bank of the Schuylkill. In conclusion, the report said it was not possible to determine the location or even the necessity for a village until after a thorough survey of the lines of communication, both major and minor, has been made. In the planning for a new industrial center, narrow lanes from farm to city, roads for light travel connecting one group of houses with another and with the factories, the location of factories themselves, the heavy, duty-trucking roads, the railroads and navigable streams should be harmoniously arranged in their proper relations to one another. The result would benefit capital and labor alike. In presenting the report, Mr. Crawford urged that action be taken looking to the establishment of through and connecting highways, not for pleasure automobiles, but to meet the needs of motor-truck transportation. State assistance, he declared, should be sought now.

John Herman Kniseley, chief of the Bureau of Municipalities, Harrisburg, described the bureau and explained its efforts to establish uniform laws. He told of the organizing of the planning commissions in cities of the third class and said that 19 have already been formed.

One chief obstacle has been encountered, he said; city officials seem unwilling to spend public money neces-

sary to carry on plans for improvement. The Pittsburgh Planning Commission was criticized, Mr. Kniseley declaring that it had accomplished very little. With sixty-three boroughs in Allegheny County a great opportunity was presented for closer relations.

Victor A. Rigauumont of Pittsburgh read an interesting paper on "The Possibilities of Housing and Town Planning in the Vicinity of Neville's Island, the United States Ordnance Department."

Following a round-table conference at noon the delegates took an automobile trip to see housing conditions in Johnstown and inspected Victor Rigauumont's drawings for a comprehensive plan for the city. A trip through the Cambria Steel Company mills followed.

In the evening "The Use of State Money for House Building" was discussed and illustrated by William R. Greeley, Boston, Mass. He described his state's housing project at Lowell in detail. Lawrence Veiller of the National Housing Association criticized state and federal aid for housing and was answered by John Ihlder.

The need of a homestead commission in Pennsylvania—a bureau to govern housing in all its phases—was emphasized at the Friday morning session. The discussion followed the presentation of an outline of a State Housing Law for Pennsylvania, submitted by a committee of the Pennsylvania Housing and Town Planning Association. Lawrence Veiller, of the national association, presided. There were spirited debates on the various phases of the proposed new housing law. Mr. Ihlder's proposition that the law be enforced under the supervision of the State Department of Health until such a time as the boroughs, etc., take individual action and that thereafter the department shall exercise supervisory power, was favored when a vote was taken. Alternate propositions were: First, that the housing law shall be enforced by the State Department of Health throughout the state, individual communities having no option as to its provisions; second, that the law be given local enforcement, the state having only supervisory powers, and third, that a Department of Housing and Town Planning be established in the state. The last proposal was the second choice of the meeting. Following the discussion of the outline for the housing law, the outline of a zoning law for second and third class cities was introduced. The outline of the housing law specifies that the law shall be regulatory, not constructive, as constructive legislation should be embodied in a separate measure. This law is to apply to all cities, boroughs and first class townships. It shall differentiate between old buildings and new, setting higher standards for dwellings hereafter erected. It shall set definite minimum standards for lot occupancy giving minimum sizes of open spaces re-

quired; light ventilation, water supply, toilet accommodation, privacy, protection against fire and maintenance and use of dwellings.

The plans of the Cambria Steel Company for the erection of 100 or more dwelling houses; the comprehensive plan evolved by the city planning commission, which is to convert the Point ground into a modern athletic field and which is to adjust and improve traffic, sewage, highway and other conditions through the city; contemplated legislation for the regulation of the erection of buildings; the result of the recent housing survey of the Johnstown Chamber of Commerce, and other things were described at the luncheon and succeeding session.

Tillman K. Saylor, city solicitor, spoke on laws regulating the construction of buildings in a municipality and told of the progress that Johnstown is making in this line relative to the establishing of a building code. Addresses were made by W. G. Hager, chairman of the housing committee of the Johnstown Chamber of Commerce; Fred Krebs, of Johnstown, who is a director of the Pennsylvania Housing and Town Planning Association; Councilman Charles H. Stroup, who described the Cambria Steel Company's housing plans; Victor A. Rigauumont, of Pittsburgh, speaking for Henry Hornbostel, of New York; J. C. H. Lubken, of the Cambria Steel Company; P. L. Carpenter of the City Planning Commission, and George Wild, who was associated with the Messrs. Hornbostel and Rigauumont in the drawing of the comprehensive plan of the city of Johnstown.

Andrew Wright Crawford read an interesting paper on "Paying the Bills for City Planning; Assessment of Benefits and Excess Condemnation."

The following officers were elected: President, A. B. Farquhar, York; first vice-president, Miss Hannah Fox, Philadelphia; second vice-president, D. W. Harper, Erie; treasurer, Frederick Krebs, Johnstown; secretary, John Ihlder, Philadelphia; directors (each for three years or until 1921)—Mrs. F. P. Iams, Pittsburg; W. S. Milener, Williamsport; Bernard J. Newmann, Philadelphia; George H. Schwan, Pittsburgh; James Archibald, Pottsville; Dr. Samuel McG. Hamill, Philadelphia; William G. Hager, Johnstown; Mrs. Julius Smith; Dr. George Woodward, Philadelphia; Frederick Biegger, Pittsburgh.

The concluding discussion was preceded by the report of a committee on waste disposal in cities of the third class. George P. Maglott, of Pittsburgh, read the report, which called it a crime to incinerate waste from tables, hotels and restaurants with the Government crying for production of more pork. Dr. Oscar Hayes, U. S. N., formerly health commissioner of Denver, asserted that the experiment of feeding garbage to hogs had been a thorough success, but made it clear that in the East it should be tried only

in cities of from 5,000 to 100,000 population. City Manager G. W. Hinkle, of Altoona, announced that Altoona is getting free collections in its contract with a pig-raising firm for the garbage.

New York State Conference of Mayors and Other City Officials.

The New York State Conference of Mayors and Other City Officials held its annual convention recently at Newburgh, N. Y. It was attended by a large number of delegates from all over the state.

At the opening session on Tuesday afternoon, following the welcoming speech of Mayor Jonathan D. Wilson, the president of the Conference, Mayor Cornelius F. Burns of Troy, gave his annual address. He recommended that the cities, through the Conference, consider the following important subjects:

Urge the next Legislature to enact legislation for the control and development of the water powers by the state.

Organize a commission to draft a municipal ownership bill for consideration by the next Legislature.

Make a study of the second class cities charter for the purpose of making any necessary changes.

Amend the Public Service Commission's law to give consumers the same privilege and protection that the utility companies now enjoy.

Ask the Legislature to amend the general tax law so that home owning and realty investing in cities will not be retarded.

Press for enactment a genuine home rule constitutional amendment.

Standardize salaries of policemen, firemen and school teachers in second class cities.

Organize a committee to study the question of what cities can and should do to help in the economic rehabilitation after the war.

Study the municipal pension problem.

He said that cities should have the power to own their utilities and that the state should develop its water powers.

At the Wednesday morning session Fred H. Waldorf, mayor of New Rochelle, presided. Nelson P. Lewis, chief engineer of the New York City Board of Estimate and Apportionment, spoke on "Methods of Paying for Paving in American Cities." He discussed the various methods employed and said that restriction of annual budgets will necessitate assessing cost of paving and renewing on property benefited. F. L. Ackerman, architect of New York City, in speaking on "England's Policy Regarding Public Improvements During War Times," emphasized the necessity of proper housing. Pierre Jay, Federal Reserve agent and chairman of the sub-committee on Capital Issues for District No. 2, explained "Considerations which Capital Issues Committee has Given to Construction by Municipalities During the Period of the War." The delegates then took a trip across the Hudson and visited Mount Beacon where they held the afternoon session.

George J. Nelbach, assistant secretary of the State Charities Aid Association, spoke on "The Problem of Tuberculosis in New York State Cities as Intensified by the War." His

speech was followed by reports from officers and committees, including those on Charity and Social Welfare; Public Health; Assessment and Taxation; Municipal Code; Municipal Financing and Accounting; Public Safety; Coal Supply; Gas and Electric Rates, and Education.

In the evening, the second session was presided over by Mayor Harry C. Walker of Binghamton. A "safety first" exhibit was shown to the delegates. C. L. Addison, assistant to the president, Long Island Railroad Company, spoke on "Prevention of Accidents at Grade Crossings." R. E. Enright, police commissioner of New York City, discussed "Solving the Municipal Traffic Problem." He urged the building of elevated speedways to carry the traffic. "A Rational Safety First Program for New York State Cities" was presented by Secretary of State Francis M. Hugo. A motion picture entitled "Careless America" was then shown.

Mayor William J. Wallin of Yonkers presided at the session held next day. Richard C. S. Drummond, city attorney of Auburn, and chairman of the Conference's steering committee, discussed "The Six-Cent Fare Problem—Past and Future." He said increased fares should be granted only if they were proved absolutely necessary. "How can the general tax law be amended to secure the relief of the present onerous taxation of real

property whereby home-owning and realty investing will be advanced in cities?" was the question discussed by John J. Merrill, state tax commissioner. Charles B. Hill, chairman of the State Public Service Commission of the Second District, in a paper, read by Judge Thomas, on "The Public Service Commission and the War," the power of the Commission to raise rates and fares as well as lower them and justified recent decisions granting increased rates.

Following a dinner given by the City of Newburgh to the members and their guests, the fifth session was held, presided over by Mayor George S. Buck of Buffalo. Mayor John F. Hyland of New York City told "Why the Empire State Cities Should Have the Authority to Own and Operate Public Utilities." Governor Charles S. Whitman of New York spoke on "New York State in War Time." Former Governor Benjamin B. Odell also spoke.

Mayor Benjamin L. Rand of North Tonawanda presided. State Senator Ross Graves urged state development of the water powers and said that the people of the state could save \$30,000,000 a year by such action. The conference adopted a resolution approving state development. A. E. Cluett, fuel administrator of Troy, spoke on coal conservation. Eugene M. Travis, state comptroller, in speaking on "The Municipality and the State," urged

home rule for cities and paid tribute to the honesty of city officials. A plan for improving the charters of the cities was considered and a committee appointed.

Officers for the coming year were chosen as follows: President, Walter R. Stone of Syracuse; vice-president, James D. Smith of Utica; treasurer, James R. Watt of Albany; secretary, William P. Capes of Albany; Bureau Council, H. Clayton Midlam of Rome, Palmer Canfield, Jr., of Kingston, R. M. Cox of Middletown, Foster Studholm of Olean, and William J. Wallin of Yonkers. The next conference will be held in Schenectady.

PERSONALS

Ekman, P. G., has resigned as city engineer of St. Augustine, Fla., and has been appointed resident highway engineer on Federal Aid project No. 1 of the state of Florida.

Wigley, Chester W., has resigned as chief of the bureau of engineering of the New Jersey State Department of Health and has become affiliated with the engineering staff of Wallace & Tiernan Co., Inc., New York City, manufacturers of chlorine control apparatus. After graduation from Cornell University, Mr. Wigley was engaged as engineer in connection with the construction of water purification plants and sewage disposal works. In 1910 he became associated with the New Jersey state health board and has been chief of the engineering department for the last three years.

Marburg, Edgar, professor of civil engineering in the University of Pennsylvania, and widely known as secretary of the American Society for Testing Materials, died in Philadelphia, June 27, after a long illness following a nervous breakdown last year. Professor Marburg was a civil engineering graduate of Rensselaer Polytechnic Institute. He was associated after 1885 with the engineering departments of a number of bridge and steel companies. In 1892, on the recommendation of a committee of eminent engineers, he was appointed head of the civil engineer department of the University with which he was connected until his death. In 1898, in conjunction with a group of well-known engineers, he organized the American Section of the International Association for Testing Materials which, following plans developed by him, became in 1902 the present American Society of Testing Materials. He was secretary of the organization and one of its leading spirits. His most important writing was in his book on "Framed Structures and Girders." He was a member of the American Society of Civil Engineers; past president of the Engineers' Club of Philadelphia; past secretary of the Society for the Promotion of Engineering Education and past chairman of the committee on science and art of the Franklin Institute of Philadelphia.

PROBLEMS CITIES ARE STUDYING WITH EXPERTS

An emergency WATER SUPPLY is being developed by Enid, Okla. The consulting engineering firm of Black & Veatch has been retained to make the improvement.

Ann Arbor, Mich., is extending its WATER DISTRIBUTION SYSTEM. The consulting engineering firm of Ackerman & Holland was retained on this improvement.

In order to improve the WATER SUPPLY of Shreveport, La., the city council has retained the consulting engineering firm of Chester & Fleming to investigate and report.

Harding, Mo., is contemplating the building of WATERWORKS to cost \$18,500. The consulting engineers for the improvement are the firm of W. B. Rollins & Co.

WATERWORKS and SEWER IMPROVEMENTS are to be made by Junction City, Mo. Preliminary surveys are in progress by the consulting engineering firm of Burns & McDonnell.

WATERWORKS improvements are to be made by Jacksonville, Ill., including a 500 feet earth dam, concrete spillway and filter plant. The engineer for the improvement is Samuel A. Greeley.

Clearfield County, Pa., is to construct a BRIDGE, plans for which have been completed by the consulting engineer, G. A. Flink.

In making DRAINAGE IMPROVEMENTS, Yankton and Clay counties, S. D., have the consulting engineering services of G. Y. Skeels.

WATERWORKS IMPROVEMENTS are to be made by Canon City, Colo. G. H. Sethman has been retained as engineer to plan the work.

In order to determine whether the local STREET RAILWAY Company is justified in seeking a higher FARE, the city has retained the accounting firm of Marwick, Mitchell, Peat & Co. to audit the company's books.

West Stewartstown, N. H., and Canaan, Vt., are jointly to build a BRIDGE across the Connecticut river. The consulting engineering firm of Storrs & Storrs has completed plans for the structure.

San Angelo, Tex., is considering the improvement of its WATER SUPPLY. Henry Exall Elrod has been retained to investigate the present system and make recommendations for improvement. The same engineer has just completed the inspection of a new activated sludge plant which he designed for the local SEWER company.

ADVANCE CONTRACT NEWS

ADVANCE INFORMATION BIDS ASKED FOR

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also correction of any errors discovered.

CONTRACTS AWARDED ITEMIZED PRICES

BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREETS AND ROADS.				
Neb.	Gaudy	2 p.m., July 20.	Grading and improving 17.1 miles earth roads, state and federal aid	George E. Johnson State Engineer, Lincoln, Neb.
O.	Grafton	1 p.m., July 20.	Grading, draining and macadamizing with waterproof or bitumen binding 2 miles of road.	F. P. Crosse, Co. Surv., Elyria, O.
Wis.	Madison	2 p.m., July 22.	Concrete pavement	Bd. of Pub. Wks.
Mich.	Detroit	noon, July 22.	Furnishing 250 tons rock asphalt and 1,000 tons crushed cobble, granite and trap rock, 2-in, 1½-in. and screenings	William T. Dust, Commr. of Parks and Boulevards.
Minn.	St. Paul	10:30 a.m., July 22.	Curbing and improving street.	H. W. Austin, Pch. Agt.
Cal.	Sacramento	2 p.m., July 22.	About 1.5 mile of road.	State Highway Comrs.
N. Y.	New York	11 a.m., July 23.	Regulating, grading, curbing and laying sidewalks; regulating and paving with improved granite block, with bituminous grouted joints on a concrete foundation; curbing and preliminary paving with bituminous macadam; regulating with sheet asphalt on 6-in. foundation concrete and paving.	M. E. Connolly, Boro. Pres. Queens, L. I. City.
Mass.	Boston	noon, July 23.	Constructing 4,800 ft. state highway.	State Hwy. Comr.
N. Y.	New York	11 a.m., July 24.	Regulating and repaving with sheet asphalt on 6-in. concrete foundation on three streets.	Edward Riegelmann, Boro. Pres. Brooklyn.
Kan.	Junction City	11 a.m., July 24.	Concrete or monolithic brick pavement on 5,900 ft. road 20 ft. wide.	Blair Boyle, Co. Engr.
Me.	Portland	noon, July 25.	4,350 sq. yds. granite block pavement.	Edward M. Hunt, Commr. of Pub. Wks.
Ariz.	Bisbee	2 p.m., July 25.	Grading road	J. C. Ryan, Co. Engr.
Wis.	Oconto	7:30 p.m., July 25.	2,128 sq. yds. reinforced concrete, creosote block or vitrified block pavement, and 1,081 cu. yds. excavation.	Orbert & Albert, Engrs., Green Bay, Wis.
Va.	Roanoke	noon, July 25.	Improving streets with macadam with asphalt binder, resurfacing with asphalt binder, and macadam with 4 inches of stone; also concrete curb and gutter.	A. W. Morris, City Engr.
Ind.	Indianapolis	10 a.m., July 25.	Road construction	L. K. Fesler, Co. Aud.
Ind.	Greenfield	10 a.m., July 26.	Constructing 6 miles gravel roads.	Chas. Boone, Co. Engr.
O.	Dayton	July 26.	Improving 3 miles of road with concrete or bituminous macadam	Stanley R. Sharts, Co. Engr.
Pa.	Pittsburgh	July 26.	Grading and paving 5,150 ft. of road.	J. P. Moore, Co. Controller
O.	Sandusky	2 p.m., July 26.	Paving 4.4 miles.	State Hwy. Com., Columbus, O.
Wash.	Tolt	July 29.	Constructing 1,200 ft. of 40 ft. concrete pavement.	Co. Commrs., Seattle, Wash.
La.	New Orleans	July 29.	Resurfacing 33 miles highway 24 ft. wide.	Duncan Buile, State Highway Engr.
Cal.	Los Angeles	July 29.	Improving a number of streets, including 182,210 cu. yds. excavation, 354,743 sq. ft. bitulithic pavement, 151,752 sq. ft. oiling and rolling, 16,680 lin. ft. cement curb, 48,780 sq. ft. cement sidewalks, 15,395 sq. ft. concrete gutter, 1,384 sq. ft. granite block gutter.	A. C. Hansen, City Engr.
O.	Hamilton	10 a.m., July 29.	Constructing ditches, reshaping, filling roadway and graveling	County Surveyor.
N. J.	Trenton	10:30 a.m., July 31.	Three road jobs, involving 52,800 sq. ft. and 29,300 sq. yds. concrete surface, and 76,800 cu. yds. grading.	State Hwy. Com.
O.	Cincinnati	noon, July 31.	Surface treatment	Albert Reinhardt, Co. Clk.
Pa.	Harrisburg	10 a.m., Aug. 1.	Twelve road construction jobs in 11 counties, involving 81,893 ft. plain concrete, 10,009 ft. vitrified block, 37,018 ft. reinforced concrete, 26,112 ft. vitrified block or plain concrete and 2,350 ft. bituminous macadam on telford base (penetration)	J. Denny O'Neill, State Hwy. Commr.
Mich.	Lansing	Aug. 1.	Road construction	F. F. Rogers, State Highway Comr.
Miss.	Hattiesburg	noon, Aug. 5.	Road truck or tractor, not more than 3 tons capacity, 2 road drags and other drag machinery that may be needed	Herbert Gillis, Clk. Bd. of Co. Supervisors.
Ind.	Rochester	2 p.m., Aug. 6.	Constructing two gravel roads.	Ernest A. Smith, Co. Aud.
Ind.	Delphi	1:30 p.m., Aug. 6.	Constructing two gravel roads.	H. D. Good, Co. Aud.
Ind.	Lawrenceburg	noon, Aug. 6.	Constructing macadam road.	H. E. Lutherbeck, Co. Aud.
Ind.	Crown Point	1 p.m., Aug. 7.	Constructing gravel road.	Geo. M. Foland, Co. Aud.
Pa.	Harrisburg	10 a.m., Aug. 8.	Reconstructing 5,700 ft. waterbound macadam on telford foundation; 4,900 ft. one-course plain concrete; 675 ft. vitrified block; 2,932 ft. one-course plain concrete; 2,334 ft. either one-course plain concrete or bituminous concrete or vitrified block on concrete foundation.	J. Denny O'Neill, State Hwy. Comr.
N. M.	Santa Fe	2 p.m., Aug. 15.	Constructing three miles of road, including corrugated iron pipe	State Highway Commission.
SEWERAGE.				
O.	North Canton	July 20.	Constructing storm and sanitary sewers, involving 8 to 24-inch vitrified tile.	Guiley & Rice, Engrs., Daily News Bldg., Canton, O.
S. D.	Aberdeen	8 a.m., July 22.	Constructing lateral sewer, involving about 1,100 ft. 10-inch	City Engr.

BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
Wash., Grandview	July 23	Constructing trunk sewers and sub-sewers	Fred E. Swain, City Clk.	
N. Y., New York	noon, July 25	Constructing temporary sanitary vitrified pipe sewers	C. D. Van Name, Boro. Pres. Richmond, St. George, S. I.	
Minn., Argyle	8 p.m., July 26	18,950 ft. 8-15-in. vitrified sewer pipe, 41 manholes, Y's, stoppers, etc.	E. A. Brekker, Vil. Clk.	
Cal., Los Angeles	July 29	Constructing storm and sanitary sewers	A. C. Hansen, City Engr.	
D. C., Washington	10 a.m., July 31	Five concrete bridges for city in West Indies (refer to file No. 100222)	Bureau of Foreign and Domestic Commerce, Dept. of Commerce, Wash., D. C.	
O., Akron	Aug. 1	Constructing modified Imhoff sewage disposal plant at infirmary, including two settling basins, 65 ft. sq., and 9x15x19 ft. reinforced concrete sludge basin	County Comrs.	
Ind., Greensburg	2 p.m., Aug. 1	Constructing ditch and drain	Cliff N. Fulton, Co. Drainage Commr.	
Ind., Knox	noon, Aug. 5	Galvanized sewers and culverts	Chas. W. Weninger, Co. Aud.	
WATER SUPPLY.				
O., North Canton	July 20	1,185 ft. 6-in. cast iron water main	Guiley & Rice, Engrs., Daily News Bldg., Canton, O.	
Mont., Livingston	July 23	1,000,000 gallon reinforced concrete reservoir	H. F. Reese, City Clk.	
N. J., Jersey City	3 p.m., July 30	Hauling, excavating and laying 34,590 ft. 72-in. riveted steel pipe and appurtenances	Dir. of Sts. and Pub. Impvts.	
Pa., Philadelphia	noon, July 31	Constructing steel water tank and tower at Fort Mifflin, Pa.	U. S. Engr. Office.	
O., Eaton	8 p.m., Aug. 14	Water works improvements, including pump and motor power	Water Wks. Office.	
Ill., Jacksonville	Aug. 15	Constructing dam 500 ft. long, 22 ft. high; concrete spillway, channel and filter plant	S. A. Greeley, Engr., 64 West Randolph St., Chicago, Ill.	
LIGHTING AND POWER.				
N. Y., New York	1:30 p.m., July 22	Boiler-fed pump in main power house	U. S. Commr. of Immigration, Ellis Island.	
D. C., Washington	10:30 a.m., July 24	Furnishing following supplies for Panama Canal: Sheet copper, street lamps, fuses, batteries, outlet boxes, conduits, reflectors, sockets, switches, fans, copper wire, wire-rope cable and clips, etc.	A. L. Flint, Gen. Pur. Officer for the Panama Canal, Division of Light and Heat.	
O., Cleveland	noon, July 25	Transformers	Bureau of Yards and Docks, Navy Dept.	
D. C., Washington	July 29	Furnishing and installing one panel switchboard, primary and secondary wiring cables, conduits, transformers, panel boards, supports, receptacles, fixtures, lamps, reflectors and accessories for lighting and power systems at shipbuilding slip at N. Y. navy yard	Bureau of Yards & Docks, Navy Dept.	
D. C., Washington	Aug. 12	Constructing power plant extension and improvements at naval station, Pearl Harbor	Bureau of Yards & Docks, Navy Dept.	
FIRE EQUIPMENT.				
N. Y., New York	1:30 p.m., July 22	Installing high pressure fire system in hospital	U. S. Commr. of Immigration, Ellis Island.	
N. Y., New York	10:30 a.m., July 22	Fifteen gasoline-propelled pumping engines	Thos. J. Drennan, Fire Comr	
N. J., Kearny	July 24	Triple combination pumping fire engine and city service truck	Town Clerk.	
BRIDGES.				
Wis., Black River Falls	July 20	Reinforced concrete bridge, 12-ft. span	Andrew Nanstad, Co. Aud.	
La., Tallulah	noon, July 20	Constructing three reinforced concrete bridges	Bridge Com., Madison Parish.	
N. D., Cavalier	1:30 p.m., July 20	Constructing reinforced concrete culverts	W. W. Felson, Co. Aud.	
N. D., Mott	2 p.m., July 21	Constructing bridge and grading approaches	E. C. Roberts, Co. Aud.	
Pa., Allentown	July 22	Constructing bridge	Co. Comrs.	
Cal., Los Angeles	2 p.m., July 22	Concrete abutments for bridge	H. J. Lelande, Co. Clk.	
Ark., Nashville	July 22	Constructing 8 steel bridges	County Clerk	
O., London	noon, July 22	Bridge repairs	Allan R. Blacker, Co. Aud.	
O., Circleville	noon, July 23	Bridge with concrete abutments	W. C. Row, Co. Engr.	
Mo., Warrensburg	10 a.m., July 23	60 ft. and 70 ft. steel bridges; removal from present site and re-erection of three steel bridges	Clark J. Jacoby, Engrg. Co., 527 Shukert Bldg., Kansas City, Mo.	
Ariz., Tuba City	2 p.m., July 24	Repainting and replanking steel highway bridge	U. S. Indian Warehouse, Chicago, Ill.	
W. Va., Clarksburg	July 24	Constructing 9 concrete bridges	J. R. Wilson, Co. Engr.	
Wash., Tacoma	11 a.m., July 25	Constructing 180 ft. Howe truss or steel bridge with necessary sub-structure	Co. Engr.	
N. Y., New York	2 p.m., July 25	Replacing pile clusters and repairing fender at bridge	John H. Delaney, Commr. of Plants and Structures.	
Mo., St. Louis	July 26	Three-span reinforced concrete bridge 98 ft. long and 60 ft. wide	L. R. Bowen, City Engr.	
Ind., Greenfield	10 a.m., July 26	Bridges and culverts	Chas. Boone, Co. Engr.	
Ind., Plymouth	2 p.m., July 29	Constructing 8 concrete arches and steel or concrete bridges	Otto O. Weber, Co. Aud.	
Pa., Harrisburg	10 a.m., Aug. 1	Constructing bridge, 20 ft. rear span, 7 ft. high	J. Denny O'Neill, State Hwy. Commr.	
Minn., Duluth	1:30 p.m., Aug. 5	Constructing bridge to cost about \$55,000	O. Halden, Co. Aud.	
Ind., Knox	noon, Aug. 5	Bridges over ditches	Chas. W. Weninger, Co. Aud.	
Ind., Monticello	10 a.m., Aug. 6	Constructing three bridges and abutments	F. E. Vincent, Co. Aud.	
Ind., Decatur	10 a.m., Aug. 6	Bridge construction	John Mosure, Co. Aud.	
Minn., Granite Falls	2 p.m., Aug. 14	Bridge construction	G. H. Wilson, Co. Aud.	
MISCELLANEOUS.				
Pa., Philadelphia	noon, July 20	Timber bulkhead repairs	George S. Webster, Dir. Dept. of Wharves, Docks and Ferries.	
Ind., Scottsburg	1 p.m., July 22	Constructing dredged ditch	Co. Supt. of Construction.	
Mich., Detroit	noon, July 22	Constructing 1, 2 or 3 public comfort stations	Van Leyen & Schilling, Architects, Union Crest Building.	
Pa., Dale	5 p.m., July 22	Constructing municipal building	W. S. Powell, 220 Ohio St., Johnstown, Pa.	
S. D., Yankton	10 a.m., July 23	Constructing drainage ditch 17.4 miles long and involving 616,000 cu. yds. excavation	G. Y. Skeels, Engr., Sioux City, Ia.	

BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
Ariz., Bisbee	July 25	Furnishing 4,756 bbls. cement and 47,000 lbs. culvert pipe	A. H. Gardner, Sec. Co. Highway. Com.
O., Cleveland	noon, July 25	Repairing percolator shell at garbage disposal plant	Commr. of Pur. & Supplies.
N. Y., New York	noon, July 29	Dredging in Port Henry Harbor	U. S. Engr. Office, 44 Whitehall St., N. Y.
Tex., El Paso	2 p.m., Aug.	1..Constructing laterals on Rio Grande project, involving 27,700 cu. yds. excavation	U. S. Reclamation Service.
La., Baton Rouge	Aug.	1..Constructing levee involving 13,000 cu. yds. earth work and 637 ft. creosoted timber bulkhead	F. M. Kerr, State Engr., New Orleans, La.
P. R., San Juan	11 a.m., Aug.	1..Constructing 340 ft. concrete bulkhead with backfilling and paving	Bureau of Insular Affairs, Washington, D. C.
N. Y., New York	noon, Aug.	6..Dredging and removing boulders in several places	U. S. Engineer Office, 44 Whitehall St.
O., Columbus	noon, Aug.	5..One 6-ton tractor and one semi-trailer chassis with 8-yd. steel dump body (alternate bid without dump body) for street cleaning department	Board of Purchase.

ROADS AND STREETS

St. Johns, Ariz.—Judge George H. Crosby, Jr., of the Apache county superior court, has announced that the officials of Apache and Greenlee counties and Supervisor Long of the forest service have entered into a contract for the building of a first class road from Springerville to Clifton, a distance of about 140 miles, the work to be finished within the next five years. Cost is estimated at \$775,000. Of this amount, Greenlee has pledged \$350,000, Apache county \$75,000 and the United States forest service \$350,000.

Colusa, Cal.—Bids for the construction of short gaps in the state highway in Colusa and Placer counties were rejected by the advisory board as being too far above the engineer's estimate.

Truckee, Cal.—Truckee chamber of commerce decided to petition the Nevada county board of supervisors to have the main streets of Truckee paved from the Stone garage to the Lincoln Highway.

Pensacola, Fla.—Commissioner Hinrichs' ordinance has been passed providing for the issuance of bonds for the paving, grading and otherwise improving of the tract of land to be shortly utilized in the Maxent tract for the erection of 400 or more houses for shipbuilding employees. The ordinance provides for a total bond issue of \$170,000, divided as follows: \$65,000 for sewers; \$30,000 for water service; \$25,000 for grading of streets, and \$50,000 for street paving.

Rock Island, Ill.—City commissioners postponed for one week action on ordinance providing for the widening and grading to a distance of 40 ft. 20th Ave. from the east side of 16th St. to the west side of 17th St.

Springfield, Ill.—Bids rejected by state highway commissioner opened June 27, 28 and 29 for road work as follows: Sects. 2, 3, 6, 9, 12, 14, 15 and 17, Federal Aid Rd.; sects. 1, 2, 4, 5, 6 and 7, Lincoln Highway; Sect. F 15d, Sect. G 15d, Iroquois county; Sect. K 15d, Kankakee county; Sect. E 15d, Ogle county; Sects. G, H, Du Page and De Kalb counties; Sects. H, I, Whiteside county, Dixie Highway. H. E. Bilger, engr.

Huntington, Ind.—Bids received July 20, 1918, at 10 a. m., by treasurer of Huntington county, for sale \$8,000 highway improvement bonds, 4½ per cent., ten years. A. H. Shaffer, treasurer.

Laporte, Ind.—The commissioners of Laporte county failed to receive any bids for the construction of the Center township road advertised for letting July 5th.

Mount Vernon, Ind.—Two issues of Posey county highway improvement bonds, advertised for sale July 8, failed to sell, County Treasurer Ehrhardt reports.

Shelbyville, Ind.—Officials of Bartholomew and Shelby counties have conferred on the subject of constructing an improved highway from Hope to Indianapolis. The proposed route leads from Hope through Norristown and north to Shelbyville. Two routes from Shelbyville to Indianapolis are considered. One was the Michigan road north into Indianapolis and the other route would lead

MUNICIPAL AND CORPORATION BONDS PURCHASED

Correspondence invited from officers of Municipalities and from well-established industrial corporations contemplating new financing.

HORNBLOWER & WEEKS

INVESTMENT SECURITIES

42 BROADWAY, NEW YORK

Boston

Chicago

Detroit

Providence

Portland, Me.

Established 1888

northwest through Boggstown and Beech Grove.

Richmond, Ind.—A \$16,000 issue of Wayne county bonds was sold to the Dickinson Trust Co., Richmond, Ind., for par and accrued interest.

Wabash, Ind.—Contract soon let paving roadway Garfield St. from Bond to McCarty Sts., and McCarty St. from Garfield to Perry Sts., gravel or water-bound macadam. R. Clair, city engr.

Franklin, La.—Washington county to vote July 27 on \$75,000 bonds to build roads.

Wichita, Kans.—Ordinance approved for the issuance \$13,515.74 bonds for the paving and otherwise improving of right of way of Wichita Rd. & Light Co. on Douglas Ave., from the east line of Washington Ave. to the east line of Hydraulic Ave., including a double track turnout at Pattle Ave. H. D. Lester, city clerk and secretary to board of commissioners.

Augusta, Me.—Council orders that a sum not exceeding \$375 be set apart from the State contingent fund for filling and grading the State land near Capital park and that the same be expended for 100 yds. of heavy material at 50 cts. per yd. and 900 yds. gravel at 35 cts. per yd., work to be done under the direction of the chairman of the board of education of the city of Augusta.

Battle Creek, Mich.—Petitions were filed asking to have Beach St. put into good condition, and Michigan Ave. graded from Emmett St. to the city limits with clay or gravel.

Battle Creek, Mich.—A petition for the city to grade LaSalle St. from East Prairie to Bidwell, also East Bidwell as far as Terrace Ave., was submitted.

Liberty, Miss.—Amite county plans to build 5.8 mi. Gloster-Centerville road. X. A. Kramer, Jackson, state highway engr.

New Albany, Miss.—Union county plans to build 6 mi. Holly Springs-Tupelo road. X. A. Kramer, Jackson, state highway engr.

Cassopolis, Mich.—Cass county plans to build roads, about \$20,000. W. W. Reynolds, engr.

Clovis, N. M.—Plans to pave streets in district between Monroe St. and Santa Fe freight depot.

Camden, N. J.—See "Water Supply."

Trenton, N. J.—Essex county's share of the state's motor vehicle fund for the current fiscal year will be \$180,000 under a tentative apportionment made by the state highway commission. The county's share of state aid, also apportioned, will be \$30,000. The apportionments of mo-

tor vehicle funds for the current year for other counties follow: Atlantic, \$115,000; Bergen, \$180,000; Burlington, \$165,000; Camden, \$108,000; Cape May, \$50,000; Cumberland, \$25,000; Gloucester, \$30,000; Hudson, \$110,000; Hunterdon, \$40,000; Mercer, \$110,000; Middlesex, \$105,000; Monmouth, \$150,000; Morris, \$105,000; Ocean, \$35,000; Passaic, \$140,000; Salem, \$52,000; Somerset, \$50,000; Sussex, \$40,000; Union, \$70,000, and Warren, \$40,000. From the total estimated amount of \$2,000,000, the board withheld a reserve of 5 per cent., amounting to \$100,000. The apportionments of state aid funds made by the commission to counties other than Essex, follow: Atlantic, \$16,000; Bergen, \$45,000; Burlington, \$15,000; Cape May, \$20,000; Cumberland, \$5,000; Gloucester, \$11,000; Hudson, \$40,000; Middlesex, \$16,000; Monmouth, \$50,000; Morris, \$30,000; Ocean, \$2,000; Passaic, \$35,000; Sussex, \$5,000; Union, \$30,000, and Warren, \$20,000.

Trenton, N. J.—State highway department considering road work as follows: Camp Merritt, Cresskill Ave. from Grand Ave. to Washington Ave., 2,000 ft., \$15,000; Madison Ave. from camp east toward Cresskill Station, 12,000 ft., \$16,000; Madison Ave. from bottom of hill to railroad station, 2,000 ft., \$15,000; Cresskill Ave. to Alpine, 2½ miles, \$35,000; Jefferson Ave. from Madison Ave. to Jay St., 1 mile, \$20,000. Hudson county—Newark Plank road across meadows between Newark and Jersey City, past United States Engineer Depot and ship yards on Newark meadows; present surface granite block and wood block; proposed maintenance, \$50,000. Middlesex county—St. George's Ave., Railway to base hospital, Colonia, 2½ miles, \$65,000; Bonhamtown to Metuchen, Perth Amboy road, \$60,000. Army officers have requested the state to improve 2 miles of this road with a concrete surface. Monmouth county—Little Silver Station to Red Bank, leading from Camp Vail, 1½ miles, \$38,000. Burlington county—Main road from Trenton and the north to Camp Dix, Bordentown-Georgetown section, \$150,000. Salem county—Fort Mott to county road at Harrisonville, 3 miles, \$16,000. Cape May county—Main road from Wissahickon Naval Barracks to Cape May city line, ¾ mile, \$27,000; Lafayette St. city line to Pennsylvania Railroad station, \$30,000. Atlantic county—Mail road, Hammonton-Elwood, to the plant of Atlantic Loading Co., 6 miles, \$190,000. If this appropriation is not approved the commission said \$25,000 should be made available for the maintenance of the 6-mile stretch. In addi-

tion to the amounts specified the commission estimated \$184,000 as necessary to meet contingencies, this making the total of \$911,000 estimated as necessary for the roads enumerated.

Utica, N. Y.—State-aid money for town highways in Oneida county received by county treasurer are: Annsville, \$1,800; Augusta, \$1,200; Ava, \$1,450; Boonville, \$2,729.91; Bridgewater, \$1,225; Camden, \$2,002.50; Deerfield, \$1,400; Florence, \$1,600; Floyd, \$1,575; Forestport, \$867.20; Kirkland, \$1,950; Lee, \$2,250; Marcy, \$1,080; Marshall, \$800; New Hartford, \$2,500; Paris, \$1,800; Remsen, \$1,750; Rome, \$3,200; Sangerfield, \$1,187; Steuben, \$1,819.25; Trenton, \$2,475; Vernon, \$1,525.64; Verona, \$3,250; Vienna, \$2,900; Western, \$2,340; Westmoreland, \$2,154.90; Whitestown, \$2,719.51.

Goldboro, N. C.—City Clerk C. M. Grantham will receive sealed bids until 3 p. m., July 22, for the following 5½ per cent. semi-annual bonds: \$40,000 1-20-year serial paving; \$35,000 1-35-year serial water, and \$15,000 1-30-year serial sewer.

Lumberton, N. C.—County road board decided to accept an offer of \$29,800 of federal aid road money to be spent in the country during the next 5 years. The board appropriated a like amount in order to get the outside aid. This makes available \$59,600 to be spent on the roads. The money will be spent in the discretion of the state highway commission. Ten per cent. of the money must be appropriated this year for the purpose of surveying the roads. Board decided also to put the Big Swamp crossing on the Lumberton-Bladenboro Rd. in good condition at once.

Canton, O.—Council passed ordinance for grading McGregor Ave. and Roy Ave. N. W. Engineer Sarver estimated the cost of paving Dueber Ave. S. W. from Fremont Pl. to Navarre Rd. as \$23,094.

Canton, O.—See "Sewerage."

Cincinnati, O.—Council passed a resolution declaring it necessary to improve Grand Vista Ave., from Montgomery Rd. to second angle southeast of Montgomery Rd., by paving with concrete reinforced.

Cincinnati, O.—Council passed an ordinance providing for an issue of bonds in the sum of \$1,300 to pay the cost and expense of condemning property to public use for widening the southeast and southwest corners of Vine St. and Mitchell Ave. and the northwest corner of Carthage Ave. and Mitchell Ave.

Cincinnati, O.—Council passed ordinance determining to proceed with the improvement of Central Ave. from north line of Fourth St. to north line of Liberty St., excepting the portion from the south line of Eighth St. to the north line of Ninth St. by paving.

Cincinnati, O.—Council passed a resolution declaring it necessary to improve Jones St. from Armory Ave. to Liberty St., by paving with asphalt or bitulithic.

Cleveland, O.—For grading, draining, curbing, paving and improving Rugby Rd. from E. 134th St. to Rodman Court, city rejected bids received May 15. New bids, R. Hoffman, city engr.

Columbus, O.—County Surveyor George L. Sickafoose was instructed by the state highway department to make a survey of a mile and a half of the Louisville-Ravenna Rd. from "Death Curve" north. The road is an inter-county highway. Improvement of the highway probably will not come until next year.

Columbus, O.—Bids probably opened by commissioners July 25 for the sale bonds for the improvement of the Massillon-Canal Fulton Rd., for which state financial aid has been obtained.

Columbus, O.—State highway commission have invited bids on road construction in Erie county. Work involves paving of 4.4 miles on the Columbus pike, estimated at \$105,425.54. The apportionment of the country on this work was placed at \$79,000 bonds for which were issued several weeks ago.

Columbus, O.—Plans to grade curb and pave East Ore St. from Olentangy St. to Kelso Rd., 500 yd. long, 36 ft. wide, and Broad St. from 3d to 4th St., 209 yd. long, 120 ft. wide, asphalt. H. A. Maetzel, city engr.

Columbus, O.—Bids opened soon for the Ashtabula-Conneaut section of the Cleveland-Buffalo road, being a part of the Main Market Road No. 1. The federal government furnishes \$10,000 per mile for the construction of this road, which will be built under the supervision of the county engineer, as resident engineer for the Ohio State Highway Department, the total distance being 11.93

miles. The total estimated cost \$441,000. Paving is to be of 4-in. brick block on a 5-in. concrete base of the monolithic construction. The new pavement is to be 16 ft. in width, with a gutter curb of 2 ft. on the side next to the street car line. This makes a total surface of 18 ft. County Engineer, Ray N. Case.

Dayton, O.—State highway department asking bids on the construction of the new highway improvements on the Covington pike. Estimated cost of paving the highway for a distance of a little over 2½ miles has been placed at \$78,569.34.

Lakewood, O.—A. O. Guild, director of finance, will receive sealed bids until noon August 5 for \$120,000 5 per cent. semi-annual 10 5-6 year average street bonds.

Oak Harbor, O.—Leroy Thompson, clerk of the board of trustees of Carroll township, Ottawa county, receiving bids July 22 for the purchase \$65,000 bonds, proceeds for the constructing the Oak Harbor Rd. North No. 1.

Sandusky, O.—Work of improving 1½ mile of state road south of Vermillion was inaugurated by County Surveyor Schultz. The road will receive a topping of water bound macadam with a tar treatment later on when shipping facilities permit the delivery of tar materials now on order.

Toledo, O.—G. Copper, Auditor of Lucas county, will receive sealed bids until 10.30 a. m., July 26, for \$60,300 5 per cent. semi-annual 5½-year average highway bonds.

Baden, Pa.—Ordinance introduced in borough council July 2 for the widening Phillips St., from Berry St. along the southerly side thereof, eastwardly a distance of four hundred feet; and also widening the same street on the northerly side thereof from Milton St. eastwardly. F. A. Barkley, president of council.

Erie, Pa.—Council concurred in the report of Street Director Eichhorn that bids for paving of 29th St., Peach to Cherry; Liberty, Second to Fourth Sts., and Dunn Blvd., Lake Rd. to Fifth St., be rejected.

Harrisburg, Pa.—Delaware county's share of the 1911 cash road tax bonus is \$3,436.27, which amount will be at the disposal of the supervisors for improving township roads and bridges, providing the plans meet with the approval of the bureau of township highways of the state highway department: Bethel (Boothwyn, R. D.), Birmingham (Chadds Ford), Chester (Chester), Concord (Ward), Edgmont (Newtown Square), Marple (Broomall), Middletown (Media, No. 2), Newtown (Newtown Square, No. 2), Springfield (Morton), Thornbury (Thornton), Upper Chichester (Boothwyn), Upper Providence (Media).

Harrisburg, Pa.—The state highway department has rejected the two bids which were received on July 2 for building 31,700 feet of reinforced concrete roadway, sixteen feet wide, on state highway route 287, in North Towanda and Ulster townships, Bradford county, because they were too high.

Harrisburg, Pa.—State Highway Commissioner J. Denny O'Neil rejected bids as being too high, which were received for state road construction in Pocopson township, Chester county, and Morgan and Franklin townships, Greene county. The Kennett Square Borough, Chester county, and Pine township, Mercer county, projects, for which no bids were received July 11, will be readvertised. Action is pending on the bids which were submitted for state road construction in Hollidaysburg, Blair county; Croyle township, Cambria county, and for grading and drainage in Allen township, Washington county.

Harrisburg, Pa.—Bids will be opened on August 1 by State Highway Commissioner J. Denny O'Neil for 12 road construction projects, aggregating 157,382 ft., or 29.80 miles, located in several counties. On the same date bids will be opened for the construction of a 20-ft. span bridge on State Highway Route 247, Fayette county. The projects are as follows: Beaver county, Darlington township, State Highway Route 204, 5,309 ft. of one-course plain cement concrete pavement, 16 ft. wide. Blair county, Duncansville Borough, State Highway Route 53, 5,443 ft. of vitrified block pavement, 16 ft. wide. Chester county, Pennsbury and Kennett township, State Highway Route 131, completion of construction of 17,795 ft. of one-course reinforced concrete pavement, 16 ft. wide. Delaware county, Aston and Concord townships, State Highway Route 131,

completion of construction of 19,223 ft. of one-course reinforced cement concrete pavement, 16 ft. wide. McKean county, Smethport Borough, and Keating township, application Nos. 575, 576 and 577, 6,260 ft. of one-course plain cement concrete pavement, 16 ft. wide. Montgomery county, Skippack township, State Highway Route 270, 2,350 ft. of bituminous macadam (penetration method) on a telford base, 16 ft. wide. Northampton county, Washington and Lower Mt. Bethel township, State Highway Route 165, 23,891 ft. of one-course plain cement concrete pavement from 20 to 36 ft. wide. Somerset county, Somerset township, State Highway Route 364, 6,675 ft. of one-course plain cement concrete pavement, 16 ft. wide. Elk county, Ridgely township, 4,566 ft. of vitrified block pavement, 16 ft. wide. Elk county, Ridgely township, State Highway Route 97, 29,667 ft. of one-course plain cement concrete pavement, 16 ft. wide. Fayette county, Springhill, Nicholson and Georges townships, State Highway Route 116, 26,112 ft. of either vitrified block pavement or plain cement concrete, 16 ft. wide. Fayette county, Washington county, Route 247, 20-ft. span and bridge, 7 ft. clear height.

New Brighton, Pa.—Property owners ask council for sidewalk grade on 8th Ave., between 7th and Allegheny Sts., and for sewer connections.

Oil City, Pa.—Ordinance establishing the center line grade and the width, location and grade of the sidewalks on Clarion St., passed.

Steelton, Pa.—Repairs will be made in the west side, South Third St., North Second St. in the vicinity of Franklin St. and in Highland St.

Wilkesburg, Pa.—Braddock township may soon ask bids for grading, paving, sewerage and retaining wall various roads. Engr., Frease & Sperling, Carl Bldg.

Woonsocket, R. I.—Board of aldermen received petition from the Woonsocket Falls Co. for further straightening of Dead Man's curve, so called, at the foot of South Main St., near Market Square, the company is desirous of erecting a building adjoining its present property. Referred to the committee on streets and bridges.

Lufkin, Tex.—Angelina county voted \$15,000 bonds to build roads in District No. 3.

Stephenville, Tex.—The proposition to issue \$150,000 to build roads in Erath county was defeated.

Wharton, Tex.—\$30,000 bond issue to build roads in Wharton county was defeated.

Ogden, Utah.—State Auditor Joseph Ririe will hold a conference here with members of the city commission and the Ogden publicity bureau and others relative to the construction of the highway from the Ogden river bridge north to the city limits.

Portsmouth, Va.—Government asks commission of roads and bridges of Norfolk county to construct a roadway on the west side of the Jamestown Blvd. and Atlantic Ave. to the army base, which at present is without permanent surfacing, and also desires paving of an extension of a new road from the junction of the Jamestown Blvd. with Hanover Ave. to 48th St.

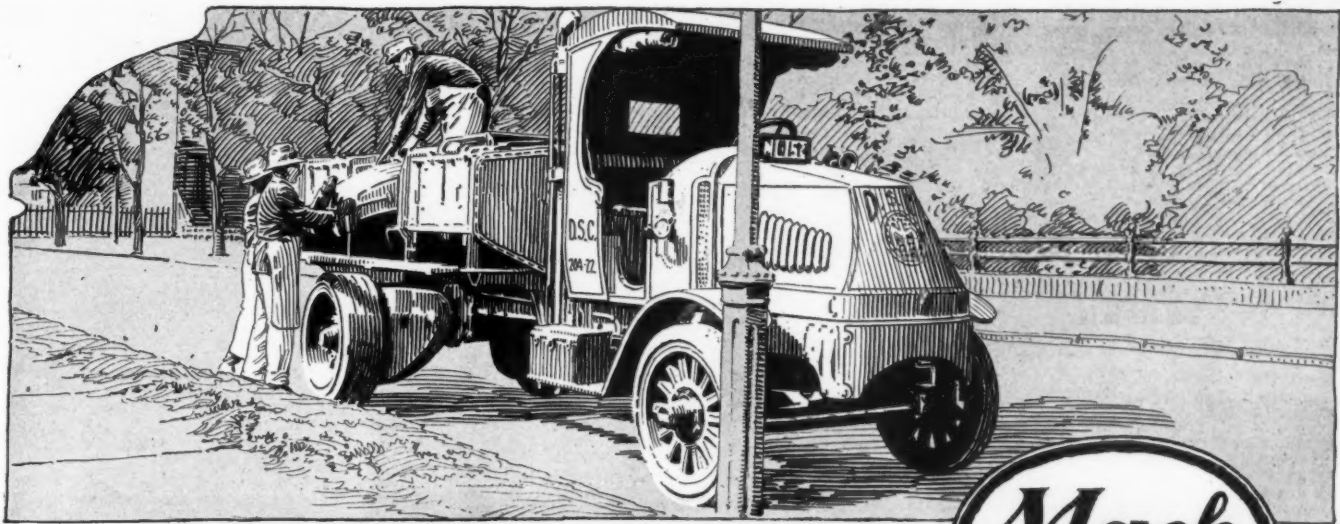
Seattle, Wash.—Bids for the improvement of N. and W. 76th St. et al., were rejected and the work ordered readvertised. City Engineer Dimock.

Seattle, Wash.—City council approved an ordinance providing for the establishing of the curb grades of Northlake Ave., from the southwesterly margin of Ewing St., as platted between blocks 7 and 8, Bagley's Addition. Ole Hanson, mayor.

Milwaukee, Wis.—Ordinance introduced in council July 1, the passage of which is now pending, to permanently establish the grade of alley, block 62, between Oneida, Biddle, Broadway and Market Sts.; alley, block 163, between Seventh, Eighth, State and Prairie Sts.; on Lawton Pl., from Harmon St. to Garfield Ave.; alley running north and south through block 20; the grade of the curb lines on Locust St. from First St. to Third St. Daniel W. Hoan, mayor.

Oshkosh, Wis.—No bids received by commissioners of Winnebago county for building 1 mile Oshkosh-Neenah road, concrete, 16 ft. wide, and 1 mile Oshkosh-Waupun road, concrete, 9 ft. wide.

Racine, Wis.—Contract soon let grading, surfacing and building culverts on Racine-Burlington road, Yorkville township, Racine county. Involves 2,500 cu. yds. grading, 5,500 sq. yds. surfacing, etc.



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MACK trucks in sizes 1—7½ tons. Tractors, 5—7—11—15 tons.

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Superior, Wis.—Authority to advertise for sale a \$31,000 issue of street bonds was voted to the city clerk by the city commission. Mayor Baxter.

Sault Ste. Marie, Ont.—The construction of bitulithic pavement costing \$75,000 is contemplated by the city council. W. L. McFaul, engineer.

New Westminster, B. C.—The boards of trade of New Westminster and Vancouver are discussing the advisability of laying a hard surface branch road to Chilliwack. Harry Stewardson, city engineer, has been asked to prepare a paper on paving to be presented at an early meeting.

BIDS RECEIVED AND CONTRACTS AWARDED.

(*Indicates Contracts Awarded.)

Oroville, Cal.—*M. Blumenkranz, of Stockton, for building 6 miles of highway in Butte county from Oroville to Shippee Rd., provided the items relating to the Northern Electric bridge were omitted. The bid on the whole job was \$82,130.

St. Andreas, Cal.—*M. Blumenkranz, of Stockton, at \$46,494.60, for the construction of 9 miles of road in Calaveras county, between the westerly boundary and Valley Springs.

Susanville, Cal.—*J. P. Moffitt, of San Francisco, for building 15 miles of road between Coppervale and Susanville, \$72,298.

New Haven, Conn.—*Franklin Contg. Co., 52 Vanderbilt St., New York City, \$16,996 and \$18,916 respectively, paving Mechanic St. from Edwards to Willow Sts., 6-in. concrete foundation and 2-in. wearing surface, also resurfacing Edwards St. with "National" 1½-in. binder, 1½-in. top; Quinnipiac Ave. from Clifton St. to Foxon Rd., concrete cement, to *C. W. Blakeslee & Sons, Waverly St., \$28,827, by city.

Chicago, Ill.—*F. P. McCormick, 82 West Washington St., (a) \$14,504; (e) \$18,059; (i) \$14,601; (j) \$13,976. *Central Paving Co., 179 West Washington St., (b) \$8,988. *Amer. Asphalt Paving Co., 133 West Washington St., (c) \$18,560; (d) \$31,169; (g) \$6,763. *Marquette Constr. Co., 133 West Washington St., (f) \$24,294. Paving following streets: (a) Catalpa Ave. from Sheridan Rd. to Broadway, involving 2,300 ft. concrete curb and gutter, 1,500 cu. yd. grading, 3,600 sq. yd. asphalt on 6-in. concrete base; (b) Clay St. from Clybourne Ave. to Kingsbury St., 700 ft. sandstone curb, 1,165 cu. yd. grading, 1,600 sq. yd. vitr. brick on 6-in. concrete, 120 ft. 10-in. tile pipe sewer; (c) Fletcher St. from Cicero to Leclaire Aves., 4,020 ft. concrete curb and gutter, 1,100 cu. yd. grading, 5,100 sq. yd. asphalt on 6-in. concrete; (d) Flournoy St. from Laramie to Central Aves., 5,050 ft. concrete curb and gutter, 3,400 cu. yd. grading, 8,090 sq. yd. asphalt on 6-in. concrete base; (e) Lawrence Ave. from Sheridan Rd., 1,215 ft. east, 2,470 ft. concrete curb and gutter, 1,800 cu. yd. grading, 4,940 sq. yd. asphalt on 6-in. concrete base; (f) Lister Ave. from Webster to Robey Sts., 2,640 ft. sandstone curb, 2,400 cu. yd. grading, 4,600 sq. yd. brick on 6-in. concrete base, 40 ft. 10-in. tile pipe sewer; (g) Maplewood Ave. from Van Buren to Harrison Sts., 1,260 ft. concrete curb, 1,362 ft. gutter, 644 cu. yd. grading, 1,720 sq. yd. asphalt on 6-in. concrete base; (h) Montrose Ave. from Lincoln Park to 263 ft. east of Clarendon St., 1,050 ft. concrete curb and gutter, 1,100 cu. yd. grading, 2,100 sq. yd. asphalt on 6-in. concrete base; (i) Pine Grove Ave. from Surf to Barry Sts., 2,320 ft. concrete curb and gutter, 1,500 cu. yd. grading, 3,230 sq. yd. asphalt on 6-in. concrete base; (j) Wellington Ave. from Sheridan Rd. to Broadway, 2,380 ft. concrete curb and gutter, 1,500 cu. yd. grading, 3,700 sq. yd. asphalt on 6-in. concrete base, to board local improvements.

Chicago, Ill.—*A. Ward & Son, Chicago, about \$21,046, for paving ¾ mile Irving Blvd. from city limits west, pavement 18 ft. wide, roadway 38 ft. 6-8-in. concrete on earth foundation.

Bloomington, Ind.—County commissioners to *McCormick & Rogers to build the Nelson Butcher pike road of 1½ mile in Salt Creek township, for \$3,877, gravel.

Eldora, Ia.—*L. L. Wood & Co., Alden, for building of road, 33 cts. cu. yd., about \$7,000. Calvin Biyeau, county auditor.

Topeka, Kan.—*Union Paving Const. Co., St. Joseph, Mo., for paving 2 miles of bituminous macadam 18-ft. roadway on West 10th Ave., running west 2 miles from west side of Topeka, at \$44,569.

Baltimore, Md.—*Arundel Construction Co., 329 South Caroline St., about \$33,502, paving private alleys, cement concrete, by board awards.

Cumberland, Md.—*Anderson Bros., Altoona, Pa., for the proposed extension of the Ridgely and Knobley Mt. yards of the Western Maryland Ry.

Towson, Md.—*T. B. Gatch & Sons, Raspeburg, for improving 1.4 mile Sparrows Point road, about \$10,000, Baltimore county.

Boston, Mass.—J. E. Quinn, 28 Dorset St., \$42,736, and J. Doherty, Boston, \$43,308, low bidders, paving Congress St. from Fort Point Channel to Atlantic Ave., and Dorchester Ave., Congress to Sumner Sts., granite block with grouted joints on concrete base.

Cambridge, Mass.—*C. G. Fletcher, Boston, \$2.20 per sq. yd., furnishing granite blocks for year, street department.

Altika, Minn.—*Myron Washburn, Haypoint, for building Moose and Willow road, \$4,075. H. C. Beecher, county aud.

Clear Lake, Minn.—Low bidders for state road: A. Walberg, Santiago, Job No. 1805, \$1,585; J. W. Emmans, Big Lake, No. 1804, \$1,769; O. A. Soule, Palmer, No. 1807, \$2,083; C. A. Colburn, Blue Hill, No. 1802, \$1,951; Wm. Petrie, Elk River, No. 1801, \$2,131; Peterson & Skoog, Orrock, No. 1803, \$1,644; Cater & Miller, Clear Lake, No. 1808, \$2,150. Arthur Robinson, county auditor.

Trenton, N. J.—C. H. Winans & Co., of Elizabeth, lowest bidders, at \$214,873.37, for the construction of section 1 of route No. 4, a distance of 3½ miles, beginning at the Neversink River bridge, Red Bank, and extending to Church St., Middletown. Other bidders: H. Wilhelm's Sons Co., Elizabeth, \$277,495.36; Blaisdell Contg. & Eng'g Corp., Brooklyn, \$249,989.20; Utility Const. Co., New Brunswick, \$229,513.61; Thompson & Glickman, Freehold, \$226,210.02; Sutton & Corson, Ocean City, \$225,730.55; John Dorer, Irvington, \$222,373.37. Highway department.

New York, N. Y.—Davney Asphalt Paving Co., 1170 Broadway, \$5,069; Uvalde Asphalt Paving Co., 1 Broadway, \$5,185; Asphalt Constr. Co., 2197 Manhattan Ave., \$5,315, low bidders repaving with sheet asphalt on concrete foundation E. 188th St. from Creston Ave. to Grand Blvd. and Concourse, and setting curb where necessary. H. Bruckner, borough pres., Bronx borough.

New York, N. Y.—*P. J. Kearns Construction Co., 2306 Creston Ave., about \$5,482 and \$8,782 respectively; 33d St. from 9th Ave. to point 500 ft. west, to *Cleveland Trinidad Paving Co., Main St., Flushing, \$9,170; regulating and repaving with granite block on concrete base, Mercer St. from 3d to 4th Sts., and 33d St. from 500 ft. west of 9th Ave. to 10th Ave. F. L. Dowling, borough pres.

New York, N. Y.—W. J. Fitzgerald, 547 W. 45th St., (a) \$10,700, (b) \$21,424, (c) \$12,102, (e) \$8,662; Asphalt Constr. Co., 210 Madison Ave., (a) \$10,736, (b) \$23,496, (c) \$12,548, (e) \$9,065; C. Helbock, 633 Wales Ave., (e) \$7,333; Davner Asphalt Co., Inc., 1170 Broadway, (d) \$82,787; Uvalde Asphalt Paving Co., 1 Broadway, (d) \$83,740; J. L. Brusstar, 150th St. and Harlem River, (d) \$90,223, low bidders regulating and repaving roadway granite block pavement on concrete base, (a) Front St. from Coenties Slip to Old Slip; (b) Worth St. from Church to Hudson Sts.; (c) Duane St. from Elm St. to Broadway, (d) Broadway from 169th to 181st St.; (e) 2d Ave. from 59th to 60th St. F. L. Dowling, borough pres.

Schenectady, N. Y.—*Sewage Disposal & Water Plant Co., for paving Wyllie St., \$634.25.

Schenectady, N. Y.—*The Sewerage Disposal & Water Supply Co. of this city for resurfacing of Washington Ave. at \$5,550, by board of contract and supply.

Akron, O.—*T. E. McShaffrey Const. Co., 173 S. Forge St., this city, low bidder for improving 2½ miles of North Springfield road, 1.72 mile of Arlington-Greensburg road, at \$83,235.

Cleveland, O.—*Bentley Bros. Co., 403 Electric Bldg., at \$79,749, for grading, draining, curbing, paving and repaving Prospect Ave. from East 30th to East 40th St., by city.

Columbus, O.—For improving roads, by state highway Commission, as follows: Allen county, sect. H, Lima-Ottawa Rd., 94 mi., grading roadway and paving with brick on rolled base, *Joseph Karsch, Selina, \$32,486. Highland county, sect. A, Hillsboro-Chillicothe Rd., grading roadway, constructing bridges and culverts and paving with water-bound macadam, *W. H. Ringwald &

Son Co., Chillicothe, \$83,605. Logan county, sect. B, Bellefontaine-Lima Rd., 2.84 mi., grading roadway, constructing bridges and culverts and paving with reinforced concrete, *McHugh Bros., Springfield, \$78,722. Scott county, sect. R-1, Ohio River Rd., grading roadway, constructing bridges and culverts and paving with monolithic brick, 1 mi., *S. Monroe Sons Co., Portsmouth, \$32,285. Scott county, sect. O, Ohio River Rd., 1.59 mi., grading roadway, constructing bridges and culverts and paving with monolithic brick, *Kelly Bros., Portsmouth, \$52,249.

Bay City, Ore.—*Adolph Erickson, for improving 1 mile of road at approximately \$12,500.

Harrisburg, Pa.—*J. Ross Mayer, of Erie, at \$109,134.73, for building 15,918 ft. of 3.01 miles of State Highway Route 84, extending from Erie toward Waterford, bituminous concrete on a concrete foundation surface, 16 ft. wide, by State Highway Comr. J. Denny O'Neil, July 12.

Oil City, Pa.—Andrew Weidle, bidder for the construction of permanent sidewalks. Mayor Agnew.

Oil City, Pa.—Mack Mfg. Co., Metropolitan Paving Brick Co., Pennsylvania Clay Co., Clydesdale Brick & Stone Co., and the Shawmut Vitified Paving Brick Works, bidders for furnishing paving brick. City council. Mayor Agnew.

Philadelphia, Pa.—Department of public works, bureau of highways, Fred Dunlap, chief, city hall, received bids July 10 on work valued at approximately \$180,000. The several characters of work are as indicated: Schedule "A," asphalt paving, "B" asphalt repaving, "C" water bound macadam surfacing, "D" bituminous and cement concrete resurfacing, "E" repaving and painting bridges.

Philadelphia, Pa.—Eastern Paving Co. lowest bidder for the asphalt work for improving Frankford Ave. between Linden St. and Poquessing Creek, and Union Paving Co. for the concrete work. From the county line southward for 2,500 ft. the surface of the road will be solid concrete and the remaining distance will be asphalt. Department of public works.

Providence, R. I.—*B. Perini, Ashland, Mass., at \$40,545, for paving 7,230 ft. road between Warren and Bristol, bituminous concrete surface on crushed stone base. Involves 5,000 cu. yd. earth excavation, 1,750 cu. yd. stone foundation, 3,000 tons crushed stone and 14,500 sq. yd. bituminous. State board public roads.

Seattle, Wash.—Board public works opened bids for concrete walks on 6th Ave. N.: R. G. Stevenson, \$7,807.50; W. H. Smith, \$8,047.75; Hansen & Haug, \$7,935. Holgate St., by fill, Swenson & Co., \$55,124.50. Gilman Ave., paving, Swenson & Co., \$17,925.50; Sparger Construction Co., \$19,541. Grade alley in block 39, Suppl. Pontius Second Addition, James Construction Co., \$2,857.

Seattle, Wash.—Board of public works opened bids for paving Rainier Ave., L. I. D. 3145: Florito Bros., one-course concrete, \$25,054.50; brick, \$33,076; asphaltic concrete, \$29,094. Sparger Const. Co., one-course concrete, \$26,369; brick, \$33,784; asphaltic concrete, \$27,689. Paving Rainier Ave., L. I. D. 3146: Florito Bros., (A) \$63,516, (B) \$83,570, (C) \$74,142. Sparger Const. Co., (A) \$65,675, (B) \$84,225, (C) \$68,878. Nettleton-Bruce Eschbach, (A) \$68,414, (B) \$81,807, (C) \$78,093.

Neenah, Wis.—Bidders for paving and curbing Main St.: Chas. Johnson, Oshkosh, grading, 75c cu. yd.; curb and gutter, 80c ft.; reinforced concrete, \$2.45 sq. yd.; C. R. Meyer & Sons, Oshkosh, grading, 75c cu. yd.; reinforced concrete paving, \$2.06 sq. yd.; J. Rasmussen & Sons, Oshkosh, grading, 85c cu. yd.; asphalt paving, \$2.80 sq. yd.; asphalt concrete, \$2.36 sq. yd.

SEWERAGE AND SANITATION

Anniston, Ala.—City council will head objections July 25 for building a terra cotta pipe 8-in. sewer, beginning at the middle of South Highland Ave. half way between D St. and E St., running west to a point half way between Quintard Ave. and Wilmer Ave., thence south to a point half way between E St. and F St., thence west to a point half way between Wilmer Ave. and Noble St., thence south to the middle of F St., thence west to the main sewer in Noble St. C. W. Cooper,

The Ransome **BANTAM PAVER**

Here's what a contractor says about it:

"We have never seen a paver that we consider anywhere near as good as the Bantam. On a recent job we frequently laid with it 265 feet of road 18 feet wide and 6½ inches thick in 9 hours and have done as much as 125 feet in four hours. This is a little better than 600 square yards of 6-inch pavement in 9 hours.

"We had a two-bag paver of another make on the same job but we found the Bantam Paver did the work so much cheaper that we took the two-bag paver away and finished the job with the Bantam."

WAUKEGAN IMPROVEMENT CO.,

Waukegan, Ill.

C. P. Morgan, Pres.

RANSOME CONCRETE MACHINERY CO.

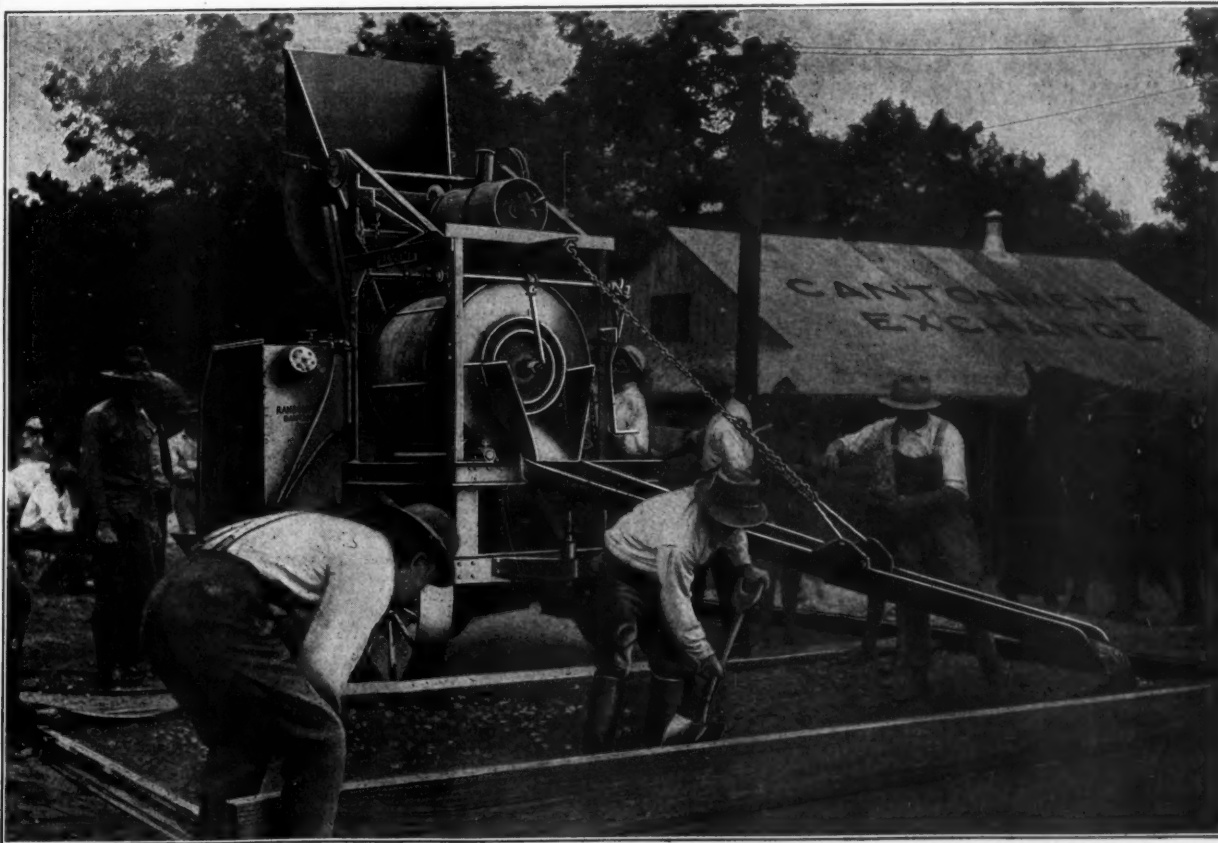
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civil engr., drawing plans and specifications.

Pensacola, Fla.—See "Streets and Roads."

Beverly, Mass.—Edward Thompson, chairman public service, receiving bids soon for sewers in Bridge, Essex and Cedar Sts., and for syphon sewer across Bass river.

Battle Creek, Mich.—The department of public works submitted plans with specifications, diagrams and estimates on cost for new sewer on Upton Ave., \$18,000.

Detroit, Mich.—Bond issues for a municipal hospital and for sewerage construction were approved by Highland Park voters at a special election.

Camden, N. J.—See "Water Supply."

Goldshoro, N. C.—See "Streets and Roads."

Canton, O.—Residents of Indiana way N. E. petitioned council for a sewer in that street from Harrisburg road to Grace Ave. N. E.

Canton, O.—Ordinance was passed authorizing Director DeCorps to prepare plans and receive bids for storm water sewers in Hartford Ave. S. E., 15th St. S. W., and Greenfield Ave. S. W.

Canton, O.—Council decided to eliminate from the list of improvements slated for this summer and to be presented to the capital issues committee at Cleveland, for approval, improvements which it is estimated would total \$142,700. It was determined to ask for ten bond issues for improvements, sewers and other city work which is classed as urgent. The total estimate of the bonds needed for these ten jobs is put at \$82,600, while the capital issues committee will also be urged to grant two other issues, totaling \$23,200. The bond issues which were endorsed and the amount of each follow: \$7,700 for sanitary sewers in 17th and 18th Sts. N. E.; \$1,700 for sanitary sewer in 13th St. N. E.; \$6,000 for repairing of Auditorium; \$5,600 for widening Cherry Ave. N. E.; \$3,200 for sanitary sewer in 17th St. N. W.; \$36,000 for water works improvements; \$6,700 for sanitary sewer in Cherry Ave., Spring Ave., 13th St. and Sherlock Pl. N. E.; \$2,700 for repairing of police and fire alarm system; \$10,000 for new sludge beds at sewage plant and to pay old claims of contractors building plant and main sewer; also enough money to complete paving of Fourth St. N. W. Acting Solicitor Ruff will also try to get \$8,900 for the improving of 14th St. N. E., and \$7,600 for the improving of Edward Ave. N. E.

New Brighton, Pa.—See "Streets and Roads."

Oshkosh, Wis.—Petition for a sewer in Mt. Vernon St. from Tennessee St. to the north side of Custer St., and for a sewer and water mains in 7th St. from Oregon St. to Nebraska St., referred to the board of public works. Mayor McHenry.

Sault Ste Marie, Ont.—City council considers building sewers, \$20,000.

BIDS RECEIVED AND CONTRACTS AWARDED.

(*Indicates Contracts Awarded.)

Los Angeles, Cal.—J. D. Zaich, Los Angeles, about \$28,799, lowest bidder Building vit, pipe sewer in Main St., between Florence and Slauson Aves. and other streets, involving 2,146 ft. 12-in., 1,310 ft. 10-in., 18,852 ft. 8-in. and 16,598 ft. 6-in. pipe.

Stockton, Cal.—J. Heafy, Bacon Bldg., Oakland, building 2 Reinsch-Wurl screen sewage disposal plants, about \$156,000, by city.

Joliet, Ill.—*Curtis & Tindall, this city, for constructing sewers, drains and man-holes, at \$2,483.

Rock Island, Ill.—*P. F. Trenkenschuh, for constructing sewers and water mains on 32d St., Eighth and Ninth Aves., at \$3,328, by city commissioners.

St. Paul, Minn.—*E. T. Webster, 437 Beacon St., this city, for constructing storm water relief sewer on Como Ave., at \$5,387.

Kearney, N. J.—*Harrison & Craig, of this city, to build a concrete flume for Frank Creek, \$14,260. The stream is a natural waterway that conveys part of the town sewage across the meadows to the Passaic River. Hudson county board of freeholders. Robert E. Torrance, mayor, Kearney.

Corona, N. Y.—*Jos. L. Sigretto & Co., Fresh Pond road, Brooklyn, installing trunk sewer in 51st St. from Lurting to Waldrom Sts., \$346,493.

Montclair, N. J.—G. Lombardo only bid received for the laying of sanitary sewer.

house connections in Orange road. Board of commissioners.

New York, N. Y.—La Mura Contg. Co., 686 Fordham Rd., (a) \$2,705; J. F. Cavalluzzo, 689 Morris Ave., (a) \$3,591; Spadora Contg. Co., 827 E 217th St., (a) \$3,704, (b) \$33,365; C. De Paliso, 964 Honeywell Ave., (b) \$38,012, (c) \$12,954; Walton Contg. Co., 103 E. 125th St., (b) \$43,940; N. Di Manni, 618 E. Fordham Rd., (c) \$13,083; C. E. Farrell Contg. Co., 875 E. 180th St., (c) \$17,487; J. J. B. LaMarch, Inc., 26 Court St., Brooklyn, (d) \$334,812; C. W. McDonnell, 1910 Webster Ave., (d) \$336,416, (e) \$826,185; O. Daniels Co., 233 Broadway, (d) \$339,363; P. B. Stanton, 2327 Walton Ave., (e) \$744,608; H. E. Fox Const. Co., 81 E. 125th St., (e) \$917,399. Low bidders July 2 building sewers and appurtenances in (a) E. 207th St. from Bainbridge Ave. to 231 ft. east; (b) Riverdale Ave. from W. 236th to W. 238th Sts.; (c) Sagamore St. from White Plains to Unionport Rds.; (d) Balcon Ave. from Latting St. to Appleton Ave.; (e) Westchester Ave. from Westchester Sq. to Blondell Ave. H. Bruckner, boro. pres., Bronx Boro.

Tulsa, Okla.—*Comstock & Hansen, Cedar Rapids, Ia., building sewerage system, \$45,153, by city.

Erie, Pa.—Council accepted the proposal of *Chester & Fleming, of Pittsburgh, to prepare plans for a sewage disposal and intercepting sewer system on a bid of \$4,750. Street Director Eichhorn.

Spokane, Wash.—Following bids received for constructing sewers in 15th Ave., from Monroe to Cedar, and on Cedar from 15th to 14th Sts.: James C. Broad, \$6,265; Kiekkla, Miller & Paulson, \$5,642.

WATER SUPPLY

Phoenix, Ariz.—City votes Aug. 6 on issuing \$100,000 for a pumping system to add to the water supply and to aid in draining the underground reservoir supply.

Pensacola, Fla.—See "Streets and Roads."

Fall River, Mass.—The Watuppa water board is arranging to operate the city water pumping apparatus by electric power to insure against any chance of interruption in the water supply service the coming winter. To properly meet the demand it will be necessary to add another centrifugal motor-driven pump of 8,000-gallon capacity, similar to the one now installed. Bids to be solicited at once for another pump. In determining upon this course the water board is also discussing other extensive and important improvements, notably a plan for overcoming the low pressure difficulty on the Highlands at the present time. This could be accomplished, it is believed, by erecting concrete tanks over the present iron tanks on Bedford St. The present tanks would be completely inclosed in the proposed concrete tanks, but the latter would be several feet higher to allow for additional pounds of pressure. Remote control valves for the Townsend Hill and Haskell St. tanks are also proposed in order to eliminate danger of serious damage to adjacent property in the event of a burst at either of these tanks. While these plans are as yet only in tentative form nevertheless they will undoubtedly be carried out in large part as soon as possible. There will be a general survey of the water supply situation and pumping station needs made at once under the direction of Prof. Barrows, the consulting engineer, and John Moran, superintendent of the water works. Data will be prepared very soon as to the cost of the proposed improvements and the benefits to result, so that the water board will be in a position to act, probably at its next meeting.

Cassopolis, Mich.—Plans to improve water works. Work involves one 80,000-gal. steel tank, one 350-gal. motor-driven centrifugal pump, one 750-gal. motor-driven centrifugal pump and chlorinating apparatus. Holland, Ackerman & Holland, 122 4th Ave., Ann Arbor, engts.

Camden, N. J.—Arthur R. Gemberling, chairman of the finance committee, will receive sealed bids until 8 p. m., July 23, for the following 4½ per cent. semi-annual bonds: \$120,000 1-40-year serial water; \$72,950 1-20-year serial street; \$79,300 1-40-year serial sewer; \$50,000 1-40-year serial fire; \$300,000 1-30-year school; \$27,750 1-30-year serial bridge.

Yonkers, N. Y.—Comptroller James J. Lynch receiving bids July 22 for the purchase of registered bonds amounting to \$912,000, viz.: \$50,000 water bonds, \$475,000 1917 revenue deficiency bonds, \$22,000 public building bonds, \$365,000 school bonds.

Goldshoro, N. C.—See "Streets and Roads."

Canton, O.—See "Sewerage."

Cleveland, O.—City council adopted ordinance to construct water main in Holbern Ave. S. E. from east line of E. 120th St. to 200 ft. west of E. 120th St., and in W. 94th St. from 60 ft. south of Almina Ave. S. W. to north line of Maywood Ave. S. W.

Defiance, O.—City Auditor H. R. Horn will receive sealed bids until noon July 29 for \$17,000 5 per cent. semi-annual 8-year average water works bonds.

Toledo, O.—A preliminary survey of the water needs of the East side is to be made by the division of water to meet industrial growth. Council appropriated \$3,000 to cover the cost of the work. Service Director Goodwillie.

Ringling, Okla.—Board of Trustees may install air-lift pump at municipal well. Frank Morgan, Water Supt.

Austin, Tex.—The attorney general approved \$240,000 of city of Stamford water works bonds, serials, 5 per cent.

Oshkosh, Wis.—See "Sewerage."

BIDS RECEIVED AND CONTRACTS AWARDED.

(*Indicates Contracts Awarded)

Douglas, Ariz.—*Wm. M. Dudley, El Paso, Tex., for water supply system at Camp Harry A. Jones.

Rock Island, Ill.—See "Sewerage."

Ironwood, Mich.—*Peter Megan, this city, for excavating and constructing a concrete reservoir of 1,000,000 gal. capacity, at \$20,245.

Ann Arbor, Mich.—*Holland, Ackerman & Holland, 122 Fourth Ave., Ann Arbor, at \$200,000, for water supply system. City council.

Janesville, Minn.—*Matt Holland, Cannon Falls, Minn., for complete installation of a well at \$8.25 per lin. ft.

Geraldine, Mont.—*Two Miracle Co., 437 Ford bldg., Great Falls, about \$10,002, for building 100,000 gal. concrete reservoir and extensions and improvements to water system; involves 24,000 ft. 4-in., 6-in. and 8-in. wood pipe and 7,535 cu. yd. excavation. City council.

Brooklyn, N. Y.—*Knight & DeMicco, 2353 Washington Ave., New York City, \$39,063, for hauling and laying water mains in Bay E. 28th and 61st Sts., 8th and Newport Aves. Comr. water supply, gas and electricity.

Peekskill, N. Y.—Water board for new pumping apparatus as follows: Steam turbine, \$5,165, *Moore Steam Turbine Corp.; 4,000 gallon pump, \$3,625, *The Albert Pump & Condenser Co.; 1,000 gallon pump, \$1,970, and water jet condenser, \$885, *Turbine Equipment Co.; one condenser pump, \$340, *American Well Works; duplicate condenser pump, \$515, *Turbine Equipment Co.; closer feed water heater, \$210, *Kelly Paterson Co.; gauges, thermometers and tachometer, *Schaffer & Budenburg; one feed water filter, \$700, *Permentet Co. Supt. Roake; Consulting Engr., Henry W. Taylor.

Lovellville, O.—*Turner Contg. Co., West Federal St. and Tod Lane, Youngstown, finishing extension of water works system, digging trenches, laying mains 20.00 ft. long, etc., \$25,278. Board public affairs.

Phoenixville, Pa.—*A. H. Rush, at \$2,860, for the construction of a concrete retaining wall at the pumping station, to be used to store coal, by water committee.

LIGHTING AND POWER

Paragould, Ark.—Plans to erect an electric light and power plant.

Louisville, Ky.—Construction of a power plant at its works to provide for increased capacity contemplated by Inman Veneer & Panel Co.

Detroit, Mich.—Purchase of two sites for new fire houses has been confirmed by the council. One at the corner of Helen and Miller road for \$5,000, and on Livernois, between Hill and Walton.

Sardis, Miss.—Panola Electric Light & Power Co. contemplating the reconstruction

PREPARED

for

MATERIAL SHORTAGE

CAR SHORTAGE

FREIGHT EMBARGO

LABOR SHORTAGE



WHEN the contractors were awarded the job for building a 1,600,000 bushel addition to the grain elevator at New Orleans, they realized that they would be called upon to meet unusual conditions as to car shortage, as well as labor and material shortage. So they immediately ordered their materials to be delivered at once, long before same would be needed. At the same time they procured a Brownhoist Locomotive Crane to unload and store the material as it came in. This was done with just a few men and the cars were released quickly even if ten or twelve cars were received daily. There were no demurrage charges. Construction was begun and proceeded smoothly and rapidly, when other contractors were seriously handicapped by the labor, car and material situation. Janse Bros., Boomer, Crain & Howes were the contractors. They depended upon the Brownhoist Crane to work day and night on this job and the crane did it continuously. The Brownhoist may cost more but is worth it. Such cases as this prove it.

The Brown Hoisting Machinery Co., Cleveland, Ohio

Engineers and Manufacturers of Heavy Dock Machinery,
Bridge Cranes, etc., as well as smaller Cranes and Hoists

BRANCH OFFICES: New York Pittsburgh Chicago San Francisco

BROWNHOIST

tion of its plant recently destroyed by fire.

Oklahoma City, Okla.—Board of Public works has received \$10,000 for street lighting purposes.

Pierre, S. D.—The municipal light and water plant, recently destroyed by fire, will be rebuilt at once. J. A. Rose, city auditor.

Moab, Utah—Plans are being made to rebuild the dam of the Moab Light & Power Co. which was destroyed by a cloudburst. D. Baldwin, Moab, Utah.

Seattle, Wash.—The Todd Drydock Co., 1801 Sixteenth Ave., S. W., will construct a heavy timbered two-story power house and storehouse building at the company's local plant, cost \$9,000.

FIRE

Van Buren, Ark.—For purchase motor fire pump funds are being raised.

Morris, Ill.—Mayor Hall and several council members will visit Joliet and Aurora in the interest of obtaining improved fire apparatus; also make investigations concerning the purchase of a stone crusher.

Muskegon, Mich.—Officials plan to have two hose wagons equipped with pumps.

Pontiac, Mich.—City commission will bring before the electors at the August 27 primary the question of issuing \$60,000 in bonds for the purchase of new equipment for the fire department. This sum should include the cost of erecting and equipping a second station in the southern part of the city.

Camden, N. J.—See "Water Supply."

Kearny, N. J.—Town council receiving bids soon for a triple-combination pumping fire engine and a city service truck. Mayor Robert C. Torrance.

Keyport, N. J.—New chemical apparatus will be purchased.

Hudson, N. Y.—Taxpayers voted to raise \$9,000 for the purpose of purchasing a motor hook and ladder truck and a motor chassis for the present hose and chemical apparatus now in use by the fire department and for the maintenance of these for one year.

Canton, O.—See "Sewerage."

Canton, O.—Ordinance was passed which provides for the issuance of \$2,700 bonds for the repair of the police and fire alarm system.

Lock Haven, Pa.—Purchase of motor fire pump is favored.

Summerhill, Pa.—Will purchase new fire equipment.

Bristol, Tenn.—City may purchase new fire apparatus.

West Bend, Wis.—Plans for fire house to cost \$5,000 are made.

BIDS RECEIVED AND CONTRACTS AWARDED.

(*Indicates Contracts Awarded)

Sandusky, O.—Seagraves Co., of Columbus; American La France Co., Elmira, N. Y.; the Robinson Co., St. Louis, Mo.; Ahrens-Fox Co., Cincinnati, and the White Co., Cleveland, bidders for new motor fire apparatus.

BRIDGES

Ukiah, Cal.—Bids received soon on building a reinforced concrete bridge across Outlet Creek in Mendocino County consisting of eight spans of thirty feet each.

Davenport, Ia.—Erection of a concrete 8 by 8 foot span structure over Goose creek on the Brady street-Eldridge road, one mile north of the new city limits, was authorized by the Scott county board. The bridge will be erected by the county crews, working under the direction of Supervisor Henry Gertz, cost in the neighborhood of \$3,000. The new structure will have a 40-foot roadway.

Eudora, Kan.—State and county highway engineers and the county commissioners from Leavenworth and Douglas counties, decided to build a permanent bridge across the Kaw as soon as the levies can be made.

Oakland, Me.—The Public Utilities Commission rendered a decision granting the application of the Maine Central Railroad for an alteration in the Smithfield Road overhead crossing at Oakland except that the width of the bridge to be erected in place of the existing structure shall be 20 feet wide in the clear, the Maine Central Railroad to perform all the labor and furnish all the materials required for the alteration.

Camden, N. J.—See "Water Supply."

MT. HOLLY, N. J.—Burlington county board of freeholders approved a plan submitted by Camden county freeholders for the construction of a new bridge over Pensauken creek on the county line, on the Moorestown and Camden road, which highway is now being improved. The matter is now up to Camden county for final approval of its engineer's plan.

Williamston, N. C.—North Carolina state highway commission appropriated \$30,000 for bridge across the Roanoke here, which will be a necessary link in the proposed Norfolk-Raleigh extension of the Boone trail. State Highway Engineer Falls of Raleigh, N. C.

Cincinnati, O.—Council passed ordinance providing for an issue of bonds in the sum of \$31,700 for the condemnation of property to public use for bridge and viaduct purposes for the McMillan St. bridge.

Cincinnati, O.—Engineer C. G. Williams, New York, surveying the site decided upon for the construction of the Nitrate plant; a number of improvements are contemplated for the immediate locality in which the plant will be constructed. One is the erection of a railroad bridge across the Little Miami river at a point east of Plainville; such a bridge will be desirable when the plant to be constructed near Broadwell is finished, in order that the Pennsylvania Railroad may run its tracks direct to the plant. Frank S. Washburn, president of the company.

Asher, Okla.—County commissioners ordered \$100,000 in bonds to be voted on at the primary election in August; proceeds towards the construction of a high water bridge across the South Canadian near here. Allan Gowan, commissioner.

Coquille, Ore.—County court authorized the publication of a call for bids at the August term court for constructing a bridge at Powers; two spans of 150

Harrisburg, Pa.—See "Streets and Roads."

Harrisburg, Pa.—Tentative plans for the proposed State St. viaduct, drawn recently by Arnold W. Brunner, Capitol Park Zone architect, met with unanimous approval of State officials and bridge experts at a conference in the office of Geo. W. Shreiner, supt. of public grounds and buildings. Supt. Shreiner, M. R. Perring, consulting engineer of the firm of Greiner & Co., Baltimore, who are drawing the plans, and Engineer Irvin, of the Pennsylvania Railroad, all favored the architect's plans. The new viaduct probably will be built on the plan of the Mulberry St. bridge and will greatly relieve the press of traffic on that viaduct and in the subway. The cost of the proposed bridge probably will be divided between the State and the city. The Harrisburg share of the cost is suggested to be the \$300,000 that had been appropriated for the Walnut St. bridge. The other part will be paid most likely by the State and the Pennsylvania Railroad Co. The State board of public grounds and buildings received the plans of State engineers on two new bridges, one at Laceyville, Wyoming county, and the other at Falls, near Wilkes-Barre, in Lycoming county. The plans will be considered and then bids will be asked for the construction of the bridges.

Pawtucket, R. I.—Board of aldermen passed joint resolution appropriating \$1,624.46 for bridges.

Ottawa, Ont.—The erection of a concrete bridge on Dundas St., costing \$22,000, is contemplated by the city.

BIDS RECEIVED AND CONTRACTS AWARDED.

(*Indicates Contracts Awarded.)

Redding, Cal.—*De Waard Bros., of San Diego, for the construction of six bridges in Shasta county, \$25,373. The bridges will be built over Sulphur, Boulder, Churn, Salt Moody and Spring Branch Creeks.

Santa Barbara, Cal.—*William Ledbetter, of Los Angeles, to build a reinforced concrete bridge in Santa Barbara county, 4 miles east of Gaviota, \$49,750.

Yreka, Cal.—*A. L. Lamb, of Montague, for \$9,980, for the reinforced concrete bridge over Shasta river, between Montague and Yreka, by the board of supervisors; also to build a concrete bridge over McAdams and Moffit Creeks, near Fort Jones, on the new county highway, at \$3,100.

Columbia City, Ind.—Bridge contracts by the commissioners as follows: No. 21, Cleveland township, to *J. W. Wise, \$1,925; No. 22, Cleveland, to *H. G. Mickey, \$1,075; No. 23, in Etna township, to *Marion Egolf, \$452. Bids received on Nos. 19 and 20 in Union township were taken under advisement. H. G. Mickey bid \$4,151.85 on No. 19 and \$2,693.20 on No. 20, while E. W. Lilly bid \$2,840 on No. 20.

Jasper, Ind.—*A. B. Krempf, of Jasper, for erection of a concrete bridge south of Jasper on the Huntinburg road, at \$1,232.

Adrian, Mich.—*B. C. Lord, Clayton, Mich., for bridges and abutments at \$21,390. Lenawee County Drain Comrs., Adrian.

Dayton, O.—For county bridges, by the county commissioners: Jefferson township, *G. W. Rexroad; Butler township, *E. H. Fauver; Clay township, *Herman Behnken; Clay township, *Chas. J. Fox; German township, *G. W. Rexroad; German township, *D. F. Bowman; Harrison township, *A. J. Kramer; Perry township, *G. H. Cetone, and Randolph township, *Herman Behnken.

Philadelphia, Pa.—See "Streets and Roads."

Chehalis, Wash.—*A. C. Sears, of Winlock, building a bridge across the creek between Vader and Winlock, \$3,444, and across Elk creek near Doty; wooden spans.

Landsdowne, Man.—*Alex. Scobie, Winnipeg, general contract for a reinforced bridge over White Mud river.

Anderson Township, Ont.—*Stratford Bridge & Iron Works Co., Stratford, general contract for the erection of two steel bridges costing \$13,000 over the Canard River.

Gillette, Ont.—*R. G. Sutherland, Ottawa, general contract for reinforced concrete and steel bridges.

MISCELLANEOUS

Washington, D. C. (Bureau of Foreign and Domestic Commerce, Department of Commerce)—The representative of a Russian firm who is at present in the United States desires to represent American manufacturers and exporters for the sale of agricultural machines, automobiles, etc., in Russian markets when conditions get more settled. Refer to Opportunity No. 27169.

Washington, D. C.—Bureau yards and docks, navy dept., plans to build quartermasters' school at Hampton Roads, Va., about \$150,000. Spec. No. 3169.

Miami, Fla.—See "Sewerage."

Peru, Ind.—A \$10,120 issue of Miami county bonds, advertised for sale July 3, did not sell, County Treasurer Knauff reports.

Baton Rouge, La.—New Orleans garbage bill to authorize the city to purchase incinerators passed the House.

Beverly, Mass.—The commissioner of public works asked for the transfer of \$800 from funds in his department for the purchase of a new car.

Boston, Mass.—Cantonment division, war department, Washington, D. C., soon lets contract building temporary warehouse for quartermaster corps; about \$1,100,000; cost plus percentage.

Detroit, Mich.—See "Sewerage."

Detroit, Mich.—Cantonment division, war dept., Washington, D. C., soon lets contract building interior depot for signal corps, about \$26,000; cost plus percentage.

Gulfport, Miss.—Gulfport navy yard will receive bids for protection system. Spec. No. 3183.

OFFICIAL ADVERTISING

"Reaches Most Bidders at the Least Cost"

Rate, \$2.00 an inch an insertion

Why pay 50 to 80 per cent. more in other papers? Our results are BETTER. Copy reaching us by 10 A. M. Thursday will go in issue mailed the next day.

Bids received until July 30, 1918.

Hauling, Excavating and Laying Steel Pipe

JERSEY CITY, N. J.

Sealed proposals will be received by the Board of Commissioners of Jersey City, N. J., TUESDAY, JULY 30, 1918, at 2:00 P. M., in the Assembly Chamber, City Hall, Jersey City.

FOR HAULING, EXCAVATING, AND LAYING 34,590 FEET OF 72-INCH RIVETED STEEL PIPE AND APPURTENANCES FOR JERSEY CITY, N. J., in accordance with plans and specifications on file in the office of the City Clerk, City Hall, Jersey City.

Blank forms of bid, showing estimate of quantities and agreements of sureties, must be obtained in the office of the Director of Streets and Public Improvements, City Hall, Jersey City, N. J., or Clyde Potts, Consulting Engineer, 30 Church Street, New York City.

Proposals must be enclosed in sealed envelopes, endorsed "Proposal for Hauling, Excavating, and Laying Steel Pipe," directed to this Board and handed to the City Clerk in open meeting when called for in the order of business relating to sealed proposals.

The bonds required to be furnished on proposals (and a possible subsequent contract) are those of some surety company authorized to do business in the State of New Jersey or a certified check will be accepted in lieu of bond. All bonds must comply with the provisions of Chapter 75, Laws of 1918.

The Board reserves the right to reject any or all proposals if it is considered for the best interests of the City so to do.

BY ORDER OF THE BOARD OF

COMMISSIONERS OF JERSEY CITY,
DANIEL O. REGAN,
Acting City Clerk.

Dated City Clerk's Office, Jersey City, July 11, 1918.

Bids received until August 1, 1918.

Highway Work

HARRISBURG, PA.

Pennsylvania State Highway Department, Harrisburg, Pa.—Sealed proposals will be received at said office until 10:00 A. M., August 1, 1918, when bids will be publicly opened and scheduled and contracts awarded as soon thereafter as possible for the reconstruction of the following pavements: 5,309 feet of One Course Plain Cement Concrete in Beaver County; 5,443 feet of Vitrified Block in Blair County; 17,795 feet of One Course Reinforced

Concrete in Chester County; 19,223 feet of One Course Reinforced Cement Concrete in Delaware County; 4,566 feet of Vitrified Block and 29,667 feet of One Course Plain Cement Concrete in Elk County; 26,112 feet of either Vitrified Block or Plain Cement Concrete in Fayette County; 6,260 feet of One Course Plain Cement Concrete in McKean County; 2,350 feet of Bituminous Macadam (Penetration Method) on a Telford Base in Montgomery County; 28,891 feet of One Course Plain Cement Concrete in Northampton County; 5,091 feet of One Course Plain Cement Concrete in Westmoreland County; 6,675 feet of One Course Plain Cement Concrete in Somerset County and for the construction of a bridge in Fayette County, 20 feet clear span, 7 feet clear height. Bidding blanks and specifications may be obtained free and plans upon payment of \$2.50 per set, except for the bridge, which plans are issued free, upon application to State Highway Department, Harrisburg. No refund for plans returned. They can also be seen at office of State Highway Department, Harrisburg; 1001 Chestnut Street, Philadelphia, and 904 Hartje Building, Pittsburgh. J. D. O'NEIL, State Highway Commissioner.

Camden, N. J.—See "Water Supply."

Elizabeth, N. J.—See "Streets and Roads."

New Brunswick, N. J.—Edward Burt, collector of Middlesex county, will receive sealed bids July 25 for \$289,000 4% per cent. semi-annual 11½-year average funding bonds.

Buffalo, N. Y.—The board of education finds that it would be advisable to install a system of sterilization in the swimming pools of the schools of Buffalo; cost has been estimated at \$33,000. The installation of such a system will reduce the present cost of maintenance of seven swimming pools about \$11,000 per year, thus paying for the installation of the new system in approximately 3½ years. James Storer, secretary county.

Long Island City, N. Y.—Cantonment division, war department, Washington, D. C., plan to build gas defense plant; about \$88,500; cost plus percentage.

Syracuse, N. Y.—An issue of \$250,000 in municipal bonds, of which the proceeds will be used to construct a garbage disposal plant, was sold by Comptroller Mary E. Conan to H. A. Kahler & Co., of New York. A premium of \$9,450, or \$259,450 for the bond issue, cutting the actual interest rate to 4.54 per cent. The bonds bear interest at 5 per cent.

Yonkers, N. Y.—See "Water Supply."

Yonkers, N. Y.—The Capital Issues Committee at Washington has approved the application of the city for permission to issue bonds and short term notes aggregating \$1,369,000. Mayor Wallin.

Jackson, N. C.—S. J. Calvert, clerk of the commissioners of Northampton county, will receive sealed bids until noon, Aug. 5, for \$50,000 6 per cent. semi-annual 5-28-year serial county bonds.

Canton, O.—See "Sewerage."

Cleveland, O.—See "Water Supply."

Toledo, O.—City council voted to use \$10,000 to repair the central police station. A new heating plant, sanitary devices and other improvements will be installed.

Erie, Pa.—City receiving bids July 26 for the purchase of \$22,000 coupon, serial bonds for the purpose of defraying the expense of making alterations and improvements in the city hall building. T. Hanlon, city clerk.

Seranton, Pa.—Erection of a public comfort station on Providence Sq. will probably have to defer indefinitely. Developments disclosed that the station can not be built as planned for the cost as estimated by the city engineer and council. The appropriation for the improvement is \$10,000. It would cost about \$20,000 to build, according to plans now, and this amount of money is not available. Bids for the contract for the building and also for the plumbing and gas-fitting, as well as the electrical fixtures, were opened. The bids far exceed the appropriation. Director Allen stated that doubtless all bids will be rejected and the thought of putting up the station abandoned until conditions are normal.

Houston, Tex.—Cantonment division, war department, Washington, D. C., soon lets contract building additional barracks, etc., at Ellington Field; about \$12,000; cost plus percentage.

Gilmerton, Va.—Cantonment division, war dept., Washington, D. C., plans to build for U. S. lumber depot, concentration camp. Cost plus percentage.

Norfolk, Va.—Bureau yards and docks, navy dept., Washington, D. C., plans to build in St. Helena four dispensaries, about \$44,000. Spec. No. 3199.

Portsmouth, Va.—United States government will spend millions on piers, warehouses, railroad tracks and to make other vast improvements for the storing of war materials and supplies. Arrangement was made to take over 200 acres of the property of the Portsmouth Co. to increase size of the navy yard.

Richmond, Va.—Hamilton & Co., Baltimore, at \$515,400, for an issue \$500,000 bonds. The bonds are short-term refunding, payable in equal instalments of \$100,000 for five years. The money is needed to pay off outstanding indebtedness of the city, part of which falls due July 15.

Colfax, Wash.—City council is considering the installation of a police alarm system to be operated from the local telephone office.

Seattle, Wash.—Otto M. Eidlitz, head of the housing division of the federal department of labor at Washington has made public the fact that the government plans the expenditure of \$500,000 in Seattle to assist in housing the shipworkers of the Seattle Construction & Dry Dock Co.

Yakima, Wash.—Ferris & Hardgrove and the Union Trust Co. of Spokane have jointly purchased another \$100,000 of an issue of bonds made by the Naches-Selah Irrigation Co. of Yakima.

Toronto, Ont.—Loans totaling \$1,920,000 will be made to the Toronto harbor commission by the city in order to enable it to continue harbor improvement during 1918 and 1919. Of this amount \$750,000 will be used for construction work in 1919 and \$975,000 during 1918.

Paris—Municipal council of Paris has submitted a report approving the issue of a credit for 50,000,000 francs with which to defray the expenses for improving the Port of Paris.

BIDS RECEIVED AND CONTRACTS AWARDED.

(*Indicates Contracts Awarded.)

Little Rock, Ark.—*G. W. Bowaghey, for building warehouse for signal corps; cost, plus percentage, about \$500,000. Cantonment division, war dept.

San Diego, Cal.—*Lange & Bergstrom, 207 Sharon Bldg., San Francisco, at \$358,870, for buildings, pavements and landing beach. Bureau yards and docks, navy dept., Washington, D. C.

Shreveport, La.—*D. Burke, Shreveport, for building 20 mi. drainage canal, from Twelve-mile Bayou to Clyde place; work involves 1,000,000 cu. yd. excavation; about \$187,500.

TOO LATE FOR CLASSIFICATION

BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREETS AND ROADS.				
Mich., Detroit	noon, July 22	Relaying or repairing about 5,000 sq. ft. concrete sidewalks; also furnishing 1,000 tons limestone, 2-inch, half-inch and screenings and 600 tons road gravel....	Wm. T. Dust, Com. of Parks and Boulevards.
Minn., St. James	3 p.m., July 22	18,500 yds. pavement.....	Christ Lawson, City Clk.
Wash., Olympia	2 p.m., July 22	Improving three miles of road.....	Co. Engr.
Mass., Boston	noon, July 22	Granite block pavement.....	Thomas F. Sullivan, Comr. of Pub. Wks.
Ia., Sioux City	July 23	500,000 cu. yds. grading on about 50 miles of road and one mile of concrete pavement.....	Edward Cradit, Chmn. Co. Bd. of Supervisors.
O., Cincinnati	noon, July 26	Paving with wood block, setting and resetting granite curbs	Chas. F. Hornberger, Dir. of Pub. Serv.
Ind., Valparaiso	2 p.m., Aug. 6	Furnishing supply of crushed stone.....	C. A. Blachley, Co. Aud.
SEWERAGE.				
Wis., Kaukauna	2 p.m., July 23	Constructing sewer	City Clk.
Ia., Webster City	1:30 p.m., July 29	Joint drain for two counties, involving 2.8 miles new open ditch and 4.13 miles dredge ditch enlarging.....	Co. Aud.
Ia., Garner	2:30 p.m., Aug. 8	Constructing sewage disposal plant with concrete tank, sand filters and sludge bed; 3,750 ft. 18-in. outlet main pipe sewer, 6 manholes; 1,320 ft. 18-in., 2,952 ft. 15-in., 3,400 ft. 12-in., 3,827 ft. 10-in. and 24,185 ft. 8-in. pipe, 80 manholes and 24 flush tanks.....	H. B. Reed, Co. Clk.
WATER SUPPLY.				
Minn., Argyle	8 p.m., July 26	Constructing waterworks	C. J. Robertson, Pres., Village Council.
Ia., Cincinnati	noon, July 26	Replacing 4-in. main with new and larger ones.....	Chas. F. Hornberger, Dir. of Pub. Service.
Wis., West Allis	July 27	Installing water mains, including hydrants and connections	City Clk.
LIGHTING AND POWER.				
Minn., Owatonna	10 a.m., July 31	Furnishing and installing heating system and boiler plant	M. J. Parcher, Co. Aud.
FIRE EQUIPMENT.				
Minn., New Ulm	5 p.m., July 29	Combination of chemical engine and hose car with pump, 300 gals. per minute capacity, 75-h.p., 1,200 ft. 2½-in. hose carrying capacity; full equipment.....	Wm. P. Backer, City Clk.
Minn., Detroit	8 p.m., Aug. 5	Furnishing 500 ft. 2½-in. standard fire hose.....	L. J. Bestick, City Clk.
BRIDGES.				
Minn., Owatonna	10 a.m., July 31	Constructing three 26-ft. reinforced concrete deck girder spans, one 23-ft. reinforced concrete deck girder span and one reinforced concrete culvert.....	M. J. Parcher, Co. Aud.
MISCELLANEOUS.				
Mich., Detroit	noon, July 22	Ornamental iron fence around sewage treatment plant at Belle Isle Park.....	Wm. T. Dust, Com. of Parks and Boulevards.

STREETS AND ROADS.

Miami, Fla.—See "Sewerage."

Rock Island, Ill.—This city and Moline officials will furnish pavement, sewers and water mains for the tracts where the government houses are to be erected. F. H. Michaelis, Kansas City architect, and project manager for the Government.

Covington, Ind.—Bids received Aug. 5, 1918, at 10:30 a. m. by treasurer of Fountain county for sale \$270,000 highway improvement bonds, 4½ per cent, five years. Albert H. McElwee, treasurer.

Des Moines, Ia.—Council petitioned to rush paving this summer on Washington Ave., within Ingleside addition; also paving along W. 2d St., from School to University.

Sioux City, Ia.—Bids received soon on the Woodbury county road project, which includes one mile of concrete paving and grading work of approximately 500,000 cu. yds. of dirt moving. Department of public roads at Washington, D. C., approved the project; cost, about \$150,000. Of this amount the Government has agreed to pay \$68,500. The grading work will be on about 50 miles of road, running from Sioux City to Smithland and Cushing.

Beverly, Mass.—Board of aldermen adopted recommendations for building a granolithic sidewalk on Magnolia St.

Beverly, Mass.—The order providing for the widening of Hale St. near the Manchester line was adopted.

Elizabeth, N. J.—N. R. Leavitt, col-

lector of Union county, will receive sealed bids until 10:30 a. m., July 29, for \$231,000 4½ per cent, semi-annual 13 2-3-year average road, bridge and hospital bonds.

Harrisburg, Pa.—Luzerne county's share of the 1911 cash road tax bonus which will be distributed among the eligible second-class townships this year is \$14,523.10. The supervisors are authorized to use this money for various road and bridge improvement purposes: Bear Creek (Bear Creek), Black Creek, Buck (both of Sugarloaf), Butler (Drums), Conyngham (Mocanaqua), Dallas (Dallas), Denison (White Haven), Dorrance (Wapwallopen, No. 2), Exeter (Pittston), Fairmount (Fairmount Sps.), Fairview, Foster (both of Mountain Top), Franklin, Hanover, Hazel (all of Dallas, No. 3), Hollenbach, Hunlock (both of Wapwallopen, R. D.), Huntington (Shickshinny, R. D.), Jackson, Jenkins (both of Dallas, No. 2), Kingston (Wyoming), Lake (Alderson, No. 1), Lehman (Lehman), Nescopeck, Newport, Pringle, Plains, Plymouth, Ross (all of Nescopeck, No. 1), Salem (Beach Haven), Slocum (Wapwallopen), Sugarloaf (Conyngham), Union, Wilkes-Barre (both of Hunlocks), Wright (Mountain Top). Susquehanna county's share is \$16,489.46: Apolocon (Little Meadows), Ararat (Uniondale, No. 2), Auburn (Meschoppen, No. 1), Bridgewater (Montrose, No. 5), Brooklyn (Brooklyn), Choconut (Choconut), Clifford (Clifford), Forest Lake (Birchardville), Gibson (Gelatt), Great Bend (Hallstead, No. 2), Harford (New Milford), Harmony (Brandt), Herrick (Herrick Center), Jackson (Jackson), Jessup (Fairdale), Lathrop (Hop-

bottom), Liberty (Montrose, No. 6), Middletown (Little Meadows), New Milford (New Milford), Rush (Rush), Silver Lake (Choconut, No. 1), Springville (Springville), Thompson (Thompson), Lenox (Hopbottom). State Highway Commissioner J. Denny O'Neil.

Harrisburg, Pa.—Pike county's share of the 1911 cash road tax bonus which will be distributed among the eligible second-class townships this year is \$5,632.70. The supervisors are authorized to use this money for various road and bridge improvement purposes: Blooming Grove (Blooming Grove), Delaware (Dingman's Ferry), Dingman (Milford, No. 1), Greene (Greentown), Lackawaxen (Rowland), Lehman (Egypt Mills), Milford (Milford), Palmyra (Paupack), Porter (Edgemere), Shohola (Shohola), West Fall (Mill Rift). McKean county's share is \$10,700.06: Annin (Turtle Point), Bradford (Custer City), Ceres (Eldred, R. D.), Corydon (Corydon), Eldred (Eldred, No. 2), Foster (Bradford), Hamilton (Ludlow), Hamlin (Hazelhurst), Keating (Smethport, No. 2), Lafayette (Custer City, Box 212), Liberty (Port Allegany), Norwich (Colegrove), Otto (Eldred), Sergeant (Clermont), Wetmore (Kane, No. 2).

Harrisburg, Pa.—State Highway Commissioner J. Denny O'Neil will open road construction bids on Aug. 8 for work in Lebanon, Lawrence, Centre and Chester counties. The projects are as follows: Lebanon county, North Annville township, application 111, 5,700 ft. of water-bound macadam on a telford base, 16 ft. wide. Lawrence county, Union and Taylor townships, applications Nos. 799 and 851, 4,900 ft. of one-course plain cement

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2—9-ton Davenport 24-in. gage, s. t. 150-lb. steam. First class.

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1—7x10 Lidgerwood DCDD, with boiler.....	1,100
1—7x10 Lambert, 3 drum, with boiler.....	1,600
1—8x12 Mundy DCDD, with boiler.....	1,500
1—9x10 Lidgerwood, 3 drum, 32" drums, without boiler	1,900
With boiler	2,300
1—5x8 DCDD Reversible O&S, with vertical engine, without boiler.....	850
With boiler	850
1—7x10 Lambert DCDD, with boiler.....	1,100

COMPRESSORS

	Price
1—12x12 Laidlaw-Dunn-Gordon, belt driven, capacity 300'	\$750
1—12x12x16 Ingersoll, straight line, steam driven, capacity about 300' at 80 to 100 lbs.	600
1—Sullivan, 2 stage air, simple steam, capacity 1800' at 80 to 100 lbs.....	2,500
2—14x12 Bury Duplex, belt driven, capacity about 550' at 80 to 80 lbs., each.....	1,000
1—14x16x16 Sullivan, 3 stage air, simple steam, capacity 600' at 80 to 100 lbs.....	1,500
1—14x9x10 Bury, 2 stage, belt driven, capacity 350'	1,500
1—Ingersoll-Rand Imperial Type XB2, 500'..	2,000

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	Price
1—Monaghan-Walker steam machine, with 50' boom, 1½ yd. bucket, almost new....	\$7,000
1—Flory outfit engine 16x12 heavy dragline type boiler, firebox 150 lb. pressure; boom, 60'; steel bucket, 2 yd.; new, 1917.....	9,000
1—24 Bucyrus, with 85' boom.....	—

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concrete pavement, 16 ft. wide. Centre county, Philipsburg borough, application No. 850, 676 ft. of vitrified block pavement 24 and 32 ft. wide. Chester county, Oxford borough, application 852, 2,932 ft. of one-course plain cement concrete pavement, 16 ft. wide. Chester county, Kennett Sq. borough, application 742, 2,334 ft. of either one-course plain cement concrete pavement or bituminous concrete and vitrified block on a concrete foundation, 16 and 32½ ft. wide.

Dallas, Tex.—All money included in the proposed bond issue of \$250,000 to be voted on July 27 is to go toward the improvement of the Fort Worth pike. County commissioners.

BIDS RECEIVED AND CONTRACTS AWARDED.

(*Indicates Contracts Awarded.)

Ambly, Ill.—*A. D. Lynch, Monmouth, Ill., for grading freight yards at Ambly, by I. C. R. R., A. D. Baldwin, chief engineer, 135 E. 11th Pl., Chicago.

Boston, Mass.—*W. J. Raffety & Co., at \$5,083.52, for bituminous macadam, Gooddale road, from Blue Hill Ave. about 630 ft. northerly. Board public works, Mayor Collins.

Dayton, O.—For paving the following streets: *John Kirchner, this city, Old Orchard St., 20c. per sq. ft.; Valley St., 13½c. per sq. ft.; W. 5th St., 14c. per sq. ft.; Meigs St., 13½c. per sq. ft.; *J. I. Geiger, this city, for paving west side Euclid Ave., 15c. per sq. ft.; both sides of Neal Ave., 16c. per sq. ft.; and *Joseph Glaser, this city, for paving Brown St., at 20c. per sq. ft.

Philadelphia, Pa.—For improving the highways of the city and for repaving and painting several city bridges, aggregating an expenditure of \$150,000, by Director Datesman of the department of public works. Resurfacing with cement, concrete and bituminous macadam Frankford Ave. from Linden St. to the north side of Stevenson St., and from Hagerman St. to the north side of Poggiessing bridge, *Eastern Paving Co., for \$54,415. Frankford Ave. north of Stevenson St. to the south side of Hagerman St., *Union Paving Co., \$21,243. Repaving and painting Passyunk Ave.

bridge over the Schuylkill River to *William A. Munday, for \$22,500, and Wyoming Ave. bridge over Frankford Creek, *William A. Munday, \$14,150. Repairs to Walnut lane bridge over Lincoln drive, *Robbins Contracting Co., \$5,000.

Pittsburgh, Pa.—*M. O'Herron Co., 1st and McKean Sts., at \$24,570; *Dallas Nardulli, 608 Lorimer Ave., \$7,423, and *Madden & O'Toole, 403 Russelwood St., \$2,134, for grading, paving, curbing, repaving, sewer, bridges and playground improvements. Department of public works. John Swan, director, city county building.

Sugar Notch, Pa.—*M. J. Malloy, Sugar Notch, for paving, curbing and grading with vitrified brick on a concrete base. Borough President Peter Siedlacki. Fredk. Butts, engineer, Miners' Bank bldg., Wilkes-Barre, Pa.

Fayetteville, W. Va.—*Biekel Co., 1601 S. 6th St., Louisville, Ky., for road improvement. Board of Fayette county commissioners, T. F. Maley, engineer, Landisburg, W. Va.

SEWERAGE

Marvell, Ark.—See "Water Supply."

Miami, Fla.—Issuance of \$175,000 of municipal bonds for following purposes was voted: Bridges, \$40,000; sewers, \$65,000; streets, \$40,000; terminal improvements, \$30,000.

South Jacksonville, Fla.—Issuance of \$100,000 of municipal bonds for extending sewers and waterworks system and electric light service into section in which government will erect residences for employees of shipyards was voted.

Rock Island, Ill.—See "Streets and Roads."

West Point, Ia.—See "Water Supply."

Gloversville, N. Y.—City having plans drawn sewer Foster St., North End, 400 ft. 20-in., 2,560 ft. 12-in. pipe. City engr., E. J. Hammer.

McAlester, Okla.—See "Water Supply." Weston, W. Va.—Engr. Chas. E. Collins, Drexel bldg., Philadelphia, drawing plans sewage disposal plant, \$45,000,

State Hospital, Weston J. B. Stephenson, president. State board of control, 403 Capitol St., Charleston, W. Va.

BIDS RECEIVED AND CONTRACTS AWARDED.

(*Indicates Contracts Awarded.)

Newton, Kan.—*Chanute Constr. Co., Chanute, Kan., at \$52,278.25, building sewage disposal plant. Engrs., Black & Veatch, 507 Inter State Bldg., Kansas City, Mo.

Portland, Me.—*C. Galli & Sons, 49 Cumberland Ave., for installing pipe sewer in Emery St. Dept. of public works, Edw. M. Hunt, City Hall.

Boston, Mass.—*Frank Drinkwater, 35 Hemlock St., West Roxbury, Mass., for sewerage works, Washington St. between New York, New Haven and Hartford Railroad and Archdale road, West Roxbury, \$7,242.50. Board public works, Mayor Collins.

Lorain, O.—*Tony Trifeletti, 319 13th St., at \$2,800, for approximately 350 lin. ft. 15-in., 2,800 ft. 12-in. vitrified tile sewer in 7th St. Dept. of public service, W. A. Pillians, director.

Portland, Ore.—The following bids for the construction of sewers were opened by the auditor: Construction of sewer in Glisan St., from the center of 10th St. to the Willamette river; John Keating, vitrified sewer pipe, \$31,510.30; construction of sewer in North Ivanhoe St. from a point 40 feet southeasterly from the southeast line of Weyerhaeuser Ave. to the sewer in Reno St.; Jacobsen-Jensen Co., cement sewer pipe, \$1,107.90; Azar & Co., cement pipe, \$1,131.25; John Keating, cement pipe, \$1,166.66.

WATER SUPPLY.

Marvell, Ark.—Town Commissioner S. L. Cooke will receive sealed bids until July 25 for \$51,200 6 per cent., 15-year water and sewer bonds.

South Jacksonville, Fla.—See "Sewerage."

Rock Island, Ill.—See "Streets and Roads."

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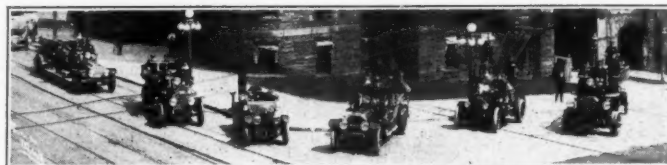
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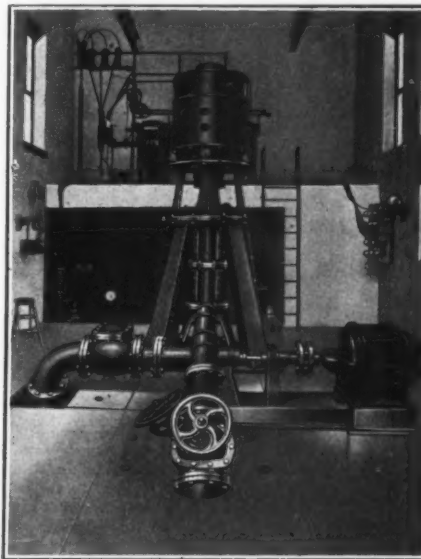
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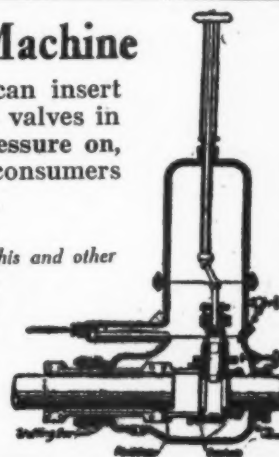
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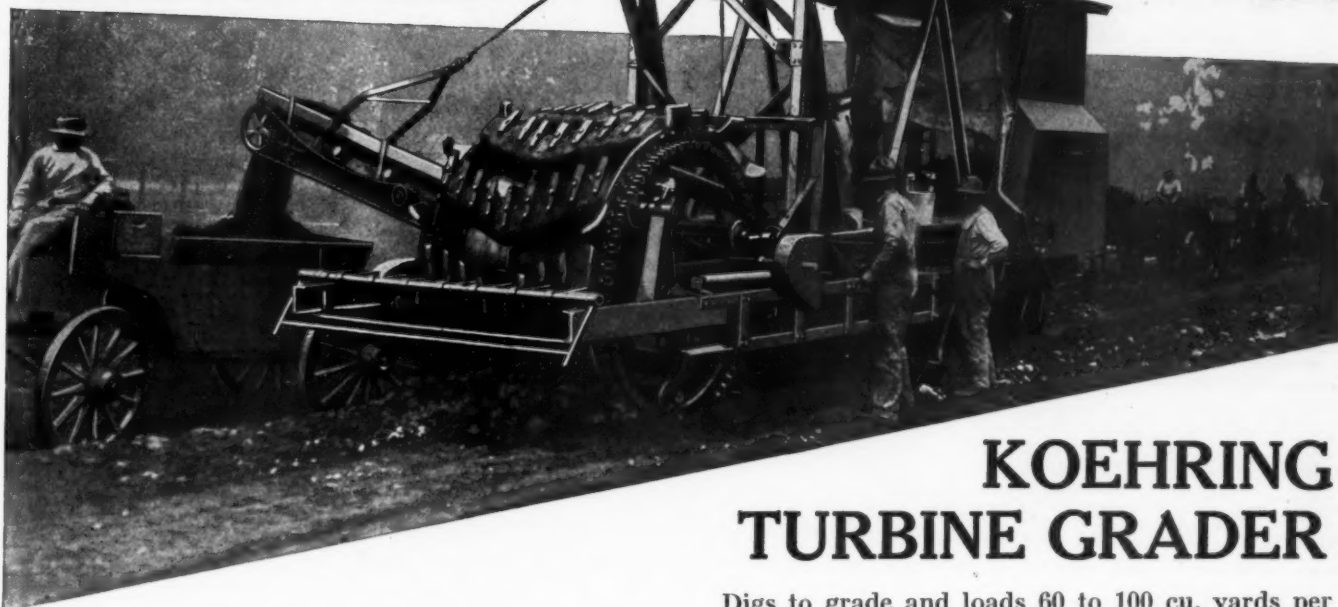
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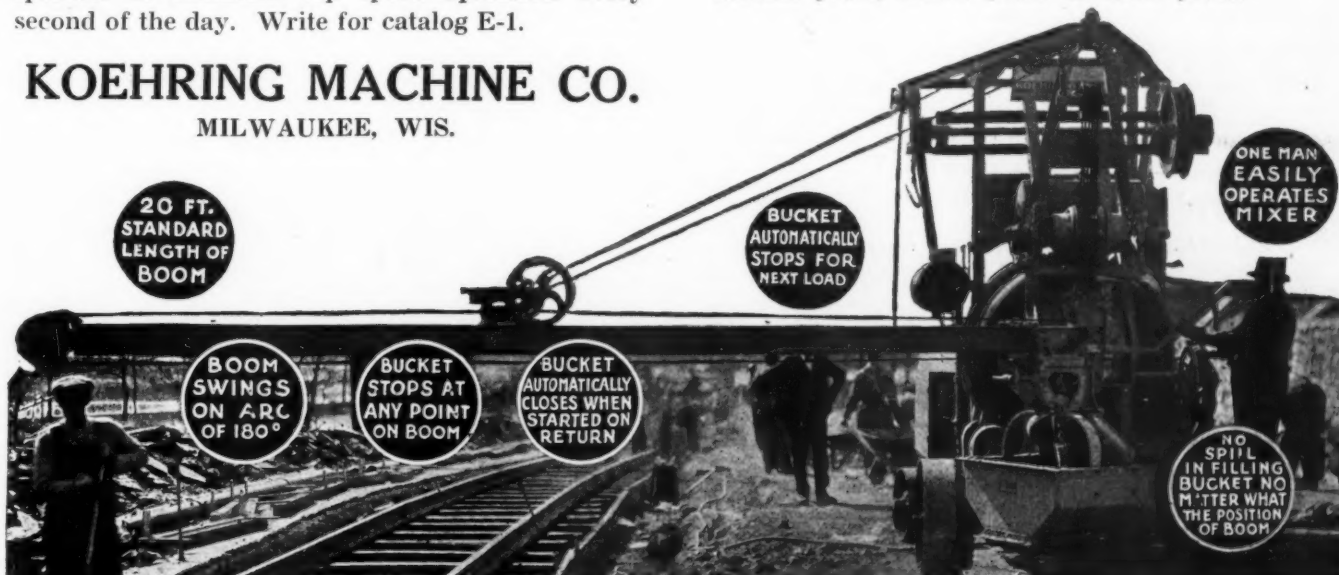
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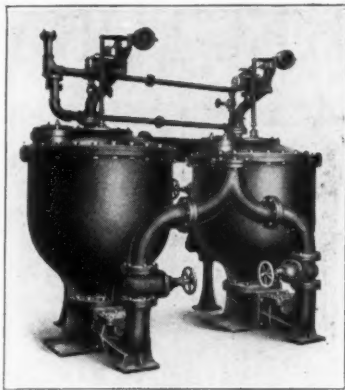
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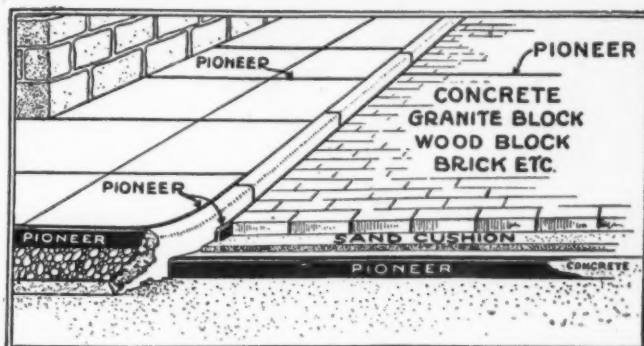
Standard Asphalt Joint Fillers for Brick and Stone Pavement.

Standard Bridge Asphalt and Preserving Oils

All these materials are produced directly from Mexican Asphalt. For further information address



STANDARD OIL COMPANY of NEW YORK
Road Oil Dept. 26 Broadway, New York



PIONEER —

PURE ASPHALT EXPANSION JOINTS

Will stand extreme expansion of the pavement without bulging.

"Pioneer" expansion joints represent the highest development of pure asphalt joint and is recommended universally for use in all kinds of paving construction.

It is tough and pliable, will not deteriorate from elements of weather, and forms a perfect bond with the sections of the pavement, completely filling the interstices when the pavement contracts.

"Pioneer" asphalt expansion joints are made from the highest quality of pure asphalt filler. It has been used on a very large percentage of pavement for the past four years.

Send for a list of Pioneer Products

The Pioneer Asphalt Company

Office: 7323 Woodlawn Ave., Chicago, Ill. Factory: Lawrenceville, Ill.

No Burned or Coked Asphalt or Clogged Pipes

The steam melting arrangement eliminates all danger. You cannot burn or coke the asphalt with a "MERRIMAN" on the job. Trouble in the pipe line between the melting tanks and the weight bucket is cut out. All pipes and valves are steam jacketed.

"MERRIMAN" Asphalt Plants are built as One Car Railroad, Two Unit Portable and Stationary Plants of various capacities.

Some of the important features to remember are: large drum and kettle capacity (a day's run in each kettle); independent power units (making it possible to use different parts



"Merriman" Plant, Ready for Shipment

of a plant independently); mechanically operated mixer at end of car plant, admitting wagons underneath. Quick and low cost of setting up and dismantling for shipment. Greater daily output than any other plants.

Write for a list of users and ask them!

The East Iron & Machine Company, Lima, O.

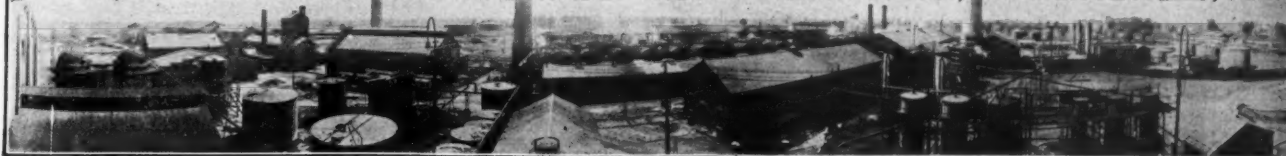
The Pioneer Manufacturers of Steam Melting Asphalt Plants

AZTEC ASPHALT

THE
**UNITED STATES ASPHALT
REFINING COMPANY**

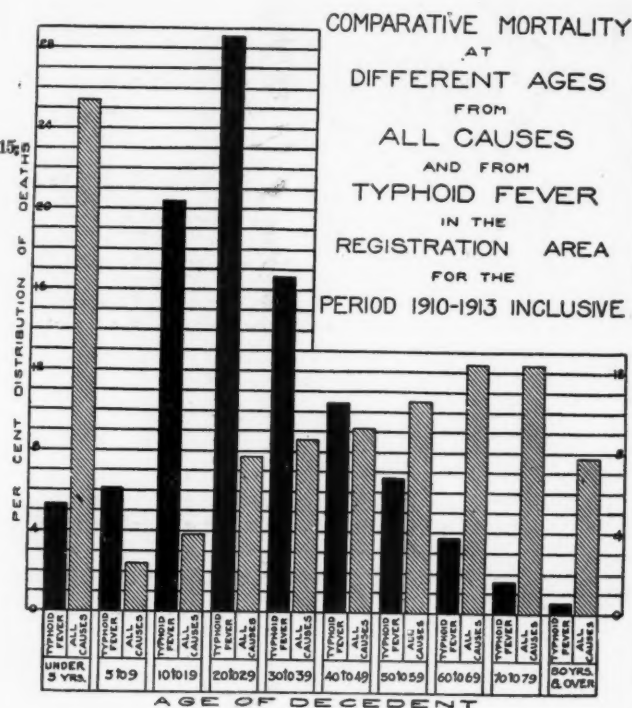
90 West Street, New York

WHERE "INDIAN" ROAD OILS ARE MADE. INDIAN REFINING CO., LAWRENCEVILLE, ILL.



*"Choose You This Day
Whom Ye Will Serve"* —Joshua 24:15

Your Country or Death by Typhoid



GEORGE A. JOHNSON
CONSULTING ENGINEER,
NEW YORK CITY.

There are more deaths from typhoid among persons between 20 and 29 than in any other ten-year age period. Just at the time when society has educated and trained them for usefulness, these young people are cut off without a chance to serve. It is at just these ages that their country most needs them. But for those who are stricken by typhoid there are no flags flying, no medals, no victories, no honor—only long suffering, untimely death.

Are you proud of your city's death-rate?

It is in your power to reduce the typhoid death rate by chlorinating your water supply.

E. B. G. LIQUID CHLORINE

destroys the germs, thus eliminating typhoid fever and saving the men and women.

Our country needs them.

It is so easy and so cheap—no financial reasons can make you hesitate—the cost of certain prevention is not more than two cents per capita.

USE LIQUID CHLORINE and run your department with a clear conscience. There is real glory for your city in having pure water.

ELECTRO BLEACHING GAS COMPANY

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Canadian Representative: General Supply Co., Ltd., Ottawa, Toronto, Montreal, Winnipeg, Vancouver

Liquid **E B G** Chlorine